

BRADLEY'S

STANDARD
FERTILIZERS

FARMER'S
REFERENCE BOOK
& ALMANAC FOR
1890



MANUFACTURED ONLY BY
BRADLEY FERTILIZER Co

27 KILBY STREET, BOSTON, MASS.

FOR SALE BY
S. W. LOBDELL, Agt.,
Sherburne, N. Y.

1890.

BRADLEY FERTILIZER CO.

	SUN.	MON.	TUE.	WED.	THU.	FRI.	SAT.		SUN.	MON.	TUE.	WED.	THU.	FRI.	SAT.
Jan.	--	--	--	1	2	3	4	July.	--	--	1	2	3	4	5
	5	6	7	8	9	10	11		6	7	8	9	10	11	12
	12	13	14	15	16	17	18		13	14	15	16	17	18	19
	19	20	21	22	23	24	25		20	21	22	23	24	25	26
	26	27	28	29	30	31	--		27	28	29	30	31	--	--
Feb.	--	--	--	--	--	--	1	Aug.	--	--	--	--	--	1	2
	2	3	4	5	6	7	8		3	4	5	6	7	8	9
	9	10	11	12	13	14	15		10	11	12	13	14	15	16
	16	17	18	19	20	21	22		17	18	19	20	21	22	23
	23	24	25	26	27	28	--		24/31	25	26	27	28	29	30
March.	--	--	--	--	--	--	1	Sept.	--	1	2	3	4	5	6
	2	3	4	5	6	7	8		7	8	9	10	11	12	13
	9	10	11	12	13	14	15		14	15	16	17	18	19	20
	16	17	18	19	20	21	22		21	22	23	24	25	26	27
	23/30	24/31	25	26	27	28	29		28	29	30	--	--	--	--
April.	--	--	1	2	3	4	5	Oct.	--	--	--	1	2	3	4
	6	7	8	9	10	11	12		5	6	7	8	9	10	11
	13	14	15	16	17	18	19		12	13	14	15	16	17	18
	20	21	22	23	24	25	26		19	20	21	22	23	24	25
	27	28	29	30	--	--	--		26	27	28	29	30	31	--
May.	--	--	--	--	1	2	3	Nov.	--	--	--	--	--	--	1
	4	5	6	7	8	9	10		2	3	4	5	6	7	8
	11	12	13	14	15	16	17		9	10	11	12	13	14	15
	18	19	20	21	22	23	24		16	17	18	19	20	21	22
	25	26	27	28	29	30	31		23/30	24	25	26	27	28	29
June.	1	2	3	4	5	6	7	Dec.	--	1	2	3	4	5	6
	8	9	10	11	12	13	14		7	8	9	10	11	12	13
	15	16	17	18	19	20	21		14	15	16	17	18	19	20
	22	23	24	25	26	27	28		21	22	23	24	25	26	27
	29	30	--	--	--	--	--		28	29	30	31	--	--	--

27 KILBY STREET. BOSTON, MASS.

1890.

THE STANDARD OF ALL GOODS
GUARANTEED.

1861-1890.

*"The profit of the earth is for all;
The king himself is served by the field." — ECCL. v. 9.*

BRADLEY FERTILIZER COMPANY.

BRADLEY'S STANDARD FERTILIZERS FOR 1890.

BRADLEY'S SUPERPHOSPHATE, a Complete Fertilizer for all Crops.
BD SEA-FOWL GUANO, for general use, like Peruvian Guano. See page 11.
BRADLEY'S AMMONIATED DISSOLVED BONES. See page 13.
FARMERS' NEW METHOD FERTILIZER. See page 15.
BRADLEY'S GROUND BONE AND POTASH MANURE, "Circle" Brand.
BRADLEY'S COMPLETE MANURE, for Potatoes and Vegetables.
BRADLEY'S COMPLETE MANURE, for Corn and Grain.
BRADLEY'S COMPLETE MANURE, for Top-Dressing Grass and Grain.
BRADLEY'S ORANGE-TREE FERTILIZER, for general use on all Fruit Trees.
ENGLISH LAWN FERTILIZER, inodorous, for Top-Dressing Lawns.
DISSOLVED BONE BLACK, OR PLAIN SUPERPHOSPHATE, 15 to 18 per cent. Soluble Phosphoric Acid.
PURE FINE-GROUND BONE AND BONE MEAL, for Cattle.
Etc., Etc., Etc.

Further information, prices, analyses, etc., of any of the above brands furnished on application.

AGRICULTURAL CHEMICALS.

SULPHATE AMMONIA, 24 to 25 per cent. Ammonia. **NITRATE SODA**, 95 per cent. purity. **MURIATE POTASH**, 80 to 85 per cent. Muriate Potash. **SULPHATE POTASH**, 50 to 55 per cent. Sulphate Potash. **KAINIT**, 23 to 25 per cent. Sulphate Potash. **SULPHATE MAGNESIA**, 50 to 60 per cent. Sulphate Magnesia. Chemicals sold at **LOWEST MARKET PRICES**, varying according to cost of importation. Prices furnished on application.

MAIN OFFICE, 27 KILBY STREET, BOSTON, MASS.

Branch Offices at Rochester, N. Y.; Baltimore, Md.; Augusta, Ga.

CONTENTS.

	PAGE
CALENDAR	3
BRADLEY'S SUPERPHOSPHATE.	5
"BD" SEA-FOWL GUANO	11
AMMONIATED DISSOLVED BONES	13
FARMERS' NEW METHOD FERTILIZER	15
HOW FERTILIZERS ARE MADE	17
REPORTS	28
HOME-MIXED FERTILIZERS VS. STANDARD PHOSPHATES.	35
MORE ABOUT FERTILIZER MAKING	39
THE IMPORTANCE OF FERTILIZERS	41
BONE	41
DIRECTIONS FOR USE	42, 44, 46, 48
TWENTY QUESTIONS ABOUT ELECTRICITY	43
WEALTH OF THE COUNTRY	45
SAVINGS THE FOUNDATION OF WEALTH.	47

CALENDAR FOR 1890.

Rising and setting of Sun and Moon given in local time.

Being the latter part of the 114th and the beginning of the 115th year of the Independence of the United States of America. Also,

The year 7398-99 of the Byzantine Era ;

The year 5650-51 of the Jewish Era ;

The year 2643 since the foundation of Rome, according to Varro ;

The year 1308 of the Mohammedan Era, or the Era of the Hegira, which begins on the 17th day of August, 1890.

THE SEASONS.

Washington Time.

Vernal Equinox (Spring begins).....	March 20 d. 10 h. 25 m. A. M.
Summer Solstice (Summer begins).....	June 21 d. 6 h. 39 m. A. M.
Autumnal Equinox (Autumn begins).....	Sept. 22 d. 9 h. 6 m. P. M.
Winter Solstice (Winter begins).....	Dec. 21 d. 3 h. 29 m. P. M.

CHRONOLOGICAL CYCLES.

Dominical Letter.....E.	Golden Number.....10	Roman Indiction.....	3
Epact.....9	Solar Cycle.....23	Julian Period.....	6603

EMBER DAYS

February.....26th, 28th, March 1st.	September.....17th, 19th, 20th.
May.....28th, 30th, 31st.	December.....17th, 19th, 20th.

FIXED AND MOVABLE FESTIVALS.

Epiphany.....Jan. 6	Palm Sunday.....Mar. 30	Whit Sunday.....May 25
Septuagesima Sund.Feb. 2	Good Friday.....April 4	Trinity Sunday.....June 1
Quinquagesima—	Easter Sunday... “ 6	Corpus Christi..... “ 5
Shrove Sunday..Feb. 16	Low Sunday.... “ 13	St. John Bapt..... “ 24
Ash Wednesday... “ 19	Rogation Sunday May 11	Michaelmas.....Sept. 29
1st Sunday in Lent. “ 23	Ascension Day—	1st Sun.in Advent...Nov. 30
St. PatrickMar. 17	Holy Thursday..May 15	Christmas.....Dec. 25

ECLIPSES FOR THE YEAR 1890.

In the year 1890 there will be three eclipses, two of the Sun and one of the Moon, and a Lunar Appulse.

A Lunar Appulse, June 2-3. The Moon being visible to North and South America, and adjacent oceans. Angle of position of point of nearest approach from North point of the Moon's limb 167 degrees to West. The nearness of the approach and the uncertainty as to the effect of the earth's atmosphere render it doubtful whether the Moon will enter the shadow of the earth, (causing a Partial Eclipse,) or not.

I. An Annular Eclipse of the Sun, June 17. Invisible to the United States. Visible to Europe, Asia, northern half of Africa, eastern extremity of South America and the intermediate Atlantic Ocean.

II. A slight Partial Eclipse of the Moon, November 26. Invisible east of Dakota. Visible to the western part of North America, Asia, Australia and the Pacific Ocean.

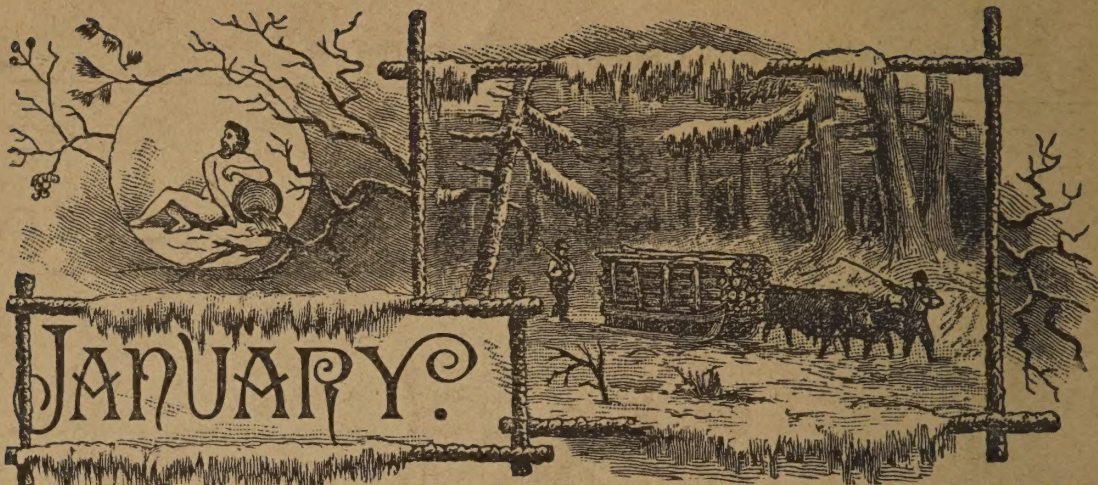
III. A Central Eclipse of the Sun, December 12. Invisible to the United States. Visible to Australia, the Indian Ocean and around the South Pole.

MORNING AND EVENING STARS.

MERCURY (♿) will be Evening Star about January 13, May 6, September 3 and December 27; and Morning Star about February 23, June 24 and October 15.

VENUS (♀) will be Morning Star till February 18; then Evening Star till December 3, and Morning Star again the rest of the year.

JUPITER (♃) will be Evening Star till January 10; then Morning Star till July 30, and Evening Star again the rest of the year.



1890

Moon's Phases	BOSTON.			NEW YORK.			WASH'TON.			LATITUDE			LATITUDE		
	D. H. M.			H. M.			H. M.			Of Boston: New Eng-			Of N. York City: Phil-		
	F. M.	6	0 53 M.	0	41 M.	0	29 M.	land States, State of			adelphia, State of N.				
	L. Q.	14	1 49 M.	1	37 M.	1	25 M.	N. York, Lower Mich-			Jersey, Conn., Penn.,				
	N. M.	20	7 5 A.	6	53 A.	6	41 A.	igan, North. Illinois,			Maryland, Dela., Vir-				
F. Q.	27	3 32 A.	3	20 A.	3	8 A.	Wisconsin and Iowa			ginia and Carolina.					

D. M.	D. W.	HISTORICAL EVENTS.			Sun rises	Sun sets	Moon sets	Sun rises	Sun sets	Moon sets
					H. M.	H. M.	H. M.	H. M.	H. M.	H. M.
1	W	☉ in perihelion. <i>Circumcision</i>			7 30	4 39	3 10	7 25	4 44	3 7
2	Th	♂ ♀ ☾: ♀ in ♍			7 30	4 39	4 12	7 25	4 44	4 8
3	Fr	Glass rediscovered, 653			7 30	4 40	5 13	7 25	4 45	5 8
4	Sa	☾ in ♍. Arnold invad. Va., 1781			7 30	4 41	6 11	7 25	4 46	6 6
5	S	☾ Cath. de Medici d., 1589 ☾			7 30	4 42	7 6	7 25	4 47	7 0
6	M	☾ 6th. ☾ in apog. <i>Epiphany</i>			7 30	4 43	rises	7 25	4 48	rises
7	Tu	Millard Fillmore born, 1800			7 29	4 44	6 4	7 25	4 49	6 9
8	W	Prussian Monarchy, 1701			7 29	4 45	7 2	7 25	4 50	7 6
9	Th	♂ ♀ ☾. Francis Drake died, 1606			7 29	4 46	8 3	7 24	4 51	8 6
10	Fr	♂ ♀ ☾. English Penny Post, '40			7 29	4 47	9 5	7 24	4 52	9 7
11	Sa	Riot in Philadelphia, 1843			7 29	4 48	10 7	7 24	4 53	10 8
12	S	Bonaparte family banished, 1816			7 28	4 49	11 10	7 24	4 54	11 10
13	M	☾ ☽ gr. el. E. 18° 51': ☾ ☽ ☾			7 28	4 50	morn	7 23	4 55	morn
14	Tu	☾ 14th. ☾ ☽ ☾			7 28	4 52	0 15	7 23	4 56	0 14
15	W	☽ in ♍. Charleston burnt, 1778			7 27	4 53	1 23	7 22	4 58	1 21
16	Th	☾ ☽ ☾. Gibbon died, 1794			7 27	4 54	2 34	7 22	4 59	2 31
17	Fr	John Tyler died, 1862			7 26	4 55	3 47	7 21	5 0	3 43
18	Sa	♂ ♀ ☽: ☾ in ♍			7 25	4 56	5 0	7 21	5 1	4 55
19	S	☽ stationary: ☽ ☽ ☾			7 25	4 58	6 12	7 20	5 2	6 6
20	M	☾ 20th. ☾ ♀ ☾: ☾ in perig.			7 24	4 59	sets	7 20	5 3	sets
21	Tu	☾ ☽ ☾			7 23	5 0	5 56	7 19	5 4	6 0
22	W	Henry VIII. born, 1547			7 23	5 1	7 14	7 19	5 6	7 17
23	Th	Daniel O'Connell tried, 1844			7 22	5 3	8 30	7 18	5 7	8 32
24	Fr	Charles Fox born, 1749			7 21	5 4	9 42	7 17	5 8	9 43
25	Sa	<i>Conversion of St. Paul</i>			7 21	5 5	10 51	7 16	5 9	10 51
26	S	Michigan admitted, 1837			7 20	5 6	11 57	7 16	5 10	11 55
27	M	☾ 27th. Mozart died, 1756			7 19	5 8	morn	7 15	5 12	morn
28	Tu	☾ Napol. III. married, 1853			7 18	5 9	1 2	7 14	5 13	0 59
29	W	♂ ☽ ☾ inf.: ☽ ♀ ☾			7 17	5 10	2 5	7 13	5 14	2 1
30	Th	☽ stationary: ☽ gr. hel. lat. N.			7 17	5 12	3 6	7 12	5 15	3 1
31	Fr	Great Eastern launched, 1858			7 15	5 13	4 5	7 11	5 17	4 0

BRADLEY'S SUPERPHOSPHATE.



ON MARCH 30TH, 1889, the *New England Homestead* published quite a full description of our North Weymouth Works, the result of a personal tour of inspection by its Agricultural Editor, who requested the privilege of visiting our Works that he might give his readers an idea of the "inside workings of a model fertilizer factory." Thinking that this article might prove interesting to our readers we print it on pages 17-41 as it appeared in the *Homestead*, with illustrations of various parts of our Works. This leaves us but a limited space for any remarks of our own, and we shall therefore touch upon a few points only, which we deem to be of especial importance to farmers in their selection of commercial fertilizers. First as to the

ANALYSIS AND COMMERCIAL VALUE.

While we of course guarantee the chemical analyses of all our products, we lay much less stress upon high valuations (which are always



1890											
Moon's Phases		BOSTON.		NEW YORK.		WASH'TON.		LATITUDE		LATITUDE	
		D. H. M.		H. M.		H. M.		Of Boston: New Eng- land States, State of N. York, Lower Mich- igan, North. Illinois, Wisconsin and Iowa		Of N. York City: Phil- adelphia, State of N. Jersey, Conn., Penn., Maryland, Dela., Vir- ginia and Carolina.	
F. M.	4 8 29 A.	8 17 A.		8 5 A.							
L. Q.	12 2 7 A.	1 55 A.		1 43 A.							
N. M.	19 5 44 M.	5 32 M.		5 20 M.							
F. Q.	26 9 22 M.	9 10 M.		8 58 M.							
D. M.	D. W.	HISTORICAL EVENTS.				Sun rises	Sun sets	Moon sets	Sun rises	Sun sets	Moon sets
						H. M.	H. M.	H. M.	H. M.	H. M.	H. M.
1	Sa	♄ in ♍. Lempiere died, 1824 ♀				7 14	5 14	5 1	7 10	5 18	4 55
2	S	♄ in apogee. Purification				7 13	5 16	5 51	7 10	5 19	5 45
3	M	Horace Greeley born, 1811				7 12	5 17	6 36	7 9	5 20	6 31
4	Tu	☾ 4th. J. Rogers burnt, 1555				7 11	5 18	rises	7 7	5 22	rises
5	W	♀ in aphelion: ♄ ♀				7 10	5 19	5 55	7 6	5 23	5 59
6	Th	French Alliance, 1778				7 9	5 21	6 58	7 5	5 24	7 1
7	Fr	Georgia settled, 1733				7 7	5 22	8 1	7 4	5 25	8 3
8	Sa	Gen. Geary died, 1873				7 6	5 23	9 4	7 3	5 26	9 5
9	S	☐♂☉. Peace at Luneville, 1801				7 5	5 25	10 8	7 2	5 28	10 7
10	M	♄ stat.: ♂♂♄: ♀ stat.				7 4	5 26	11 13	7 1	5 29	11 11
11	Tu	First English Lottery, 1569				7 2	5 27	morn	7 0	5 30	morn
12	W	☾ 12th. ♂♂♄				7 1	5 29	0 21	6 58	5 31	0 18
13	Th	☾ Ethan Allen died, 1789				6 59	5 30	1 31	6 57	5 32	1 27
14	Fr	St. Valentine's Day				6 58	5 31	2 42	6 56	5 34	2 37
15	Sa	♄ in ♍				6 57	5 32	3 52	6 54	5 35	3 46
16	S	♄ ♀ ♄. Dr. Kane died, 1857				6 56	5 34	4 57	6 53	5 36	4 51
17	M	♄♂♄: ♄ in perigee				6 54	5 35	5 55	6 52	5 37	5 50
18	Tu	☾ ♀☉ sup.: 8 ♀☉				6 53	5 36	6 42	6 50	5 39	6 48
19	W	☾ 19th. ♀♂♄. Ash Wed.				6 51	5 37	sets	6 49	5 40	sets
20	Th	☐♀☉. Arth. Young died, 1820				6 50	5 39	7 16	6 48	5 41	7 18
21	Fr	Louis XVI. executed, 1793				6 48	5 40	8 29	6 46	5 42	8 29
22	Sa	Bradlaugh expelled, 1882				6 47	5 41	9 39	6 45	5 43	9 38
23	S	♄ in ♍: ♄ gr. elong. W. 26° 50'				6 45	5 43	10 47	6 43	5 45	10 45
24	M	St. Matthias				6 44	5 44	11 53	6 42	5 46	11 50
25	Tu	☾ ♂♀♄				6 42	5 45	morn	6 40	5 47	morn
26	W	☾ 26th. J. P. Kemble d., 1813				6 41	5 46	0 57	6 39	5 48	0 53
27	Th	Nicholas Biddle died, 1844				6 39	5 47	1 58	6 38	5 49	1 53
28	Fr	♀ gr. hel. lat. S.: ♄ in ♍				6 38	5 49	2 56	6 36	5 50	2 50
...	...										
...	...										
...	...										



easily obtainable) than upon the *intrinsic* value of our fertilizers, dependent upon the selection, preparation, and combination of the materials used. The *kind* of plant-food is oftentimes far more important than the *quantity*, and yet the chemist, failing to determine the *sources* of plant-food, has to rely for his valuations upon *quantity* rather than *quality*. Manufacturers, therefore, who look more to their *profits* than their reputation, use such materials as will produce high valuations at the least expense and thus rob their fertilizers of *agricultural* value for the sake of the *commercial*. While such fertilizers may show good results in the chemist's laboratory and look well in the Station Reports, the farmer will detect their inferiority in the field, though oftentimes at a considerable cost to himself for his experience.

Bear in mind that a "*cheap*" fertilizer is by no means necessarily an *economical* one, but, on the contrary, may prove

A DECIDEDLY EXPENSIVE INVESTMENT.

It is not so much the price as the content of good available plant-food that determines the relative worth of a fertilizer. The analysis is an unreliable guide, as it gives the quantity of plant-food irrespective of its quality or the sources from which it is derived. The absolute

TRIAL IN THE FIELD ALONE

will show the difference between a fertilizer manufactured for *commercial* value and one compounded for *agricultural* value. It is also well to remember that the cost of freight and handling on a cheap or low-grade fertilizer is just as much per ton as that on a high-grade fertilizer. Where, then, is the economy in a cheap fertilizer when the plant-food costs as much or more per pound, and is more than likely to be far less valuable? Farmers, as a rule, understand these matters much better than they did, and yet it is human nature to be attracted by an article which is recommended as "*cheap*," though nine times out of ten proving to be dear. Farmers are certainly tired of being humbugged by the artful arguments of those who profess such philanthropy that they are willing to sell them something for ninety-five cents that has cost a dollar. In buying their fertilizers as well as other commodities, farmers wish to procure reliable and honest goods at fair prices, or, in other words, they wish to get a fair equivalent for their money. With the almost unprecedented competition that exists in



1890											
Moon's Phases		BOSTON.		NEW YORK.		WASH'TON.		LATITUDE		LATITUDE	
		D. H. M.		H. M.		H. M.		Of Boston: New England States, State of N. York, Lower Michigan, North. Illinois, Wisconsin and Iowa		Of N. York City: Philadelphia, State of N. Jersey, Conn., Penn., Maryland, Dela., Virginia and Carolina	
F. M.	6 2 3 A.	1 51 A.	1 39 A.								
L. Q.	13 11 21 A.	11 9 A.	10 57 A.								
N. M.	20 4 17 A.	4 5 A.	3 53 A.								
F. Q.	28 4 48 M.	4 36 M.	4 24 M.								
D. M.	D. W.	HISTORICAL EVENTS.				Sun rises	Sun sets	Moon sets	Sun rises	Sun sets	Moon sets
						H. M.	H. M.	H. M.	H. M.	H. M.	H. M.
1 Sa	☾ in apogee.	St. David	☾			6 36	5 50	3 48	6 35	5 51	3 42
2 S		Walpole died, 1797				6 34	5 51	4 34	6 33	5 52	4 28
3 M		Nevada admitted, 1863				6 33	5 52	5 15	6 31	5 54	5 10
4 Tu	♂♂♂ Scorpii: ☽ ♀					6 31	5 54	5 50	6 30	5 55	5 46
5 W	☿ in aphelion					6 29	5 55	6 20	6 28	5 56	6 17
6 Th	☾ 6th.	Alamo Fight, 1836	☾			6 28	5 56	rises	6 27	5 57	rises
7 Fr	☾	Bible Society founded, '04	☾			6 26	5 57	6 56	6 25	5 58	6 57
8 Sa		William III. died, 1702				6 24	5 58	8 0	6 24	5 59	8 0
9 S	♂♂♂ Wm. I. of Germany d. '88					6 23	5 59	9 5	6 22	6 0	9 4
10 M		Prince of Wales married, 1862				6 21	6 1	10 13	6 20	6 1	10 10
11 Tu		New York Blizzard, 1888				6 19	6 2	11 23	6 19	6 2	11 19
12 W	♂♂♂. Patent for N. Y., 1664					6 18	6 3	morn	6 17	6 3	morn
13 Th	☽ 13th.	Uranus discov., 1781	☽			6 16	6 4	0 33	6 15	6 5	0 28
14 Fr	☾ in ☿		☾			6 14	6 5	1 42	6 14	6 6	1 37
15 Sa		Insurrection La Vendee, 1793	☾			6 12	6 6	2 47	6 12	6 7	2 41
16 S	♂♂♂ Jas. Madison born, 1781		♂♂♂			6 11	6 8	3 45	6 11	6 8	3 39
17 M	☾ in perigee.	St. Patrick	☾			6 9	6 9	4 34	6 9	6 9	4 29
18 Tu		John C. Calhoun born, 1782				6 7	6 10	5 15	6 7	6 10	5 11
19 W	♂♂♂ Milan Revolt, 1848		♂♂♂			6 6	6 11	5 50	6 6	6 11	5 47
20 Th	☾ 20th.	☉ ent. ♀. Spring	☾			6 4	6 12	sets	6 4	6 12	sets
21 Fr	♂♀♂.	[begins]	♂♀♂			6 2	6 13	7 16	6 2	6 13	7 16
22 Sa		Earthquake at Quito, 1859				6 0	6 14	8 25	6 1	6 14	8 23
23 S		Morrison R. Waite died, 1888				5 59	6 15	9 34	5 59	6 15	9 31
24 M	♂♂♂ Longfellow died, 1882		♂♂♂			5 57	6 16	10 41	5 57	6 16	10 37
25 Tu	☿ gr. hel. lat. S. Annunciation		☿			5 55	6 18	11 45	5 56	6 17	11 40
26 W		Reign of Terror in Paris, 1871				5 53	6 19	morn	5 54	6 18	morn
27 Th	☾ in ♍.	James I. d., 1625	☾			5 52	6 20	0 46	5 52	6 19	0 41
28 Fr	☾ 28th.	Raphael died, 1520	☾			5 50	6 21	1 41	5 51	6 20	1 35
29 Sa		☾ in apogee	☾			5 48	6 22	2 30	5 49	6 21	2 24
30 S		Earthquake in Peru, 1828				5 46	6 23	3 13	5 47	6 22	3 8
31 M		Allies enter Paris, 1814				5 45	6 24	3 50	5 45	6 23	3 45

the manufacture of commercial fertilizers, any profit more than a fair return of interest on his money is beyond the reach of the honest manufacturer, and any considerable saving in the purchase of a fertilizer offered as an inducement by the seller is sufficient ground for suspicion as to the quality of the article offered. We do not claim to sell our fertilizers without profit, for we intend to remain in our business.

WHAT WE DO CLAIM

is this, that with a practical experience covering nearly thirty years, with unsurpassed, if not unequalled, facilities for buying our materials and manufacturing our goods, with an established trade greater than that of any other company in our line, we maintain that we are in a position to supply *any* grade of fertilizers as *cheap*, to say the least, as any one, where quality and intrinsic value are properly considered, and where a responsible guaranty is given with every sale. Our reputation alone is sufficient guaranty of the purity and value of our goods, for it must be apparent to any one who stops to reflect that a company which has been so long engaged in one line of business, and whose entire success is staked upon the maintenance of its reputation for superior quality of goods, could not, without jeopardizing its all, sell any goods that have not been most carefully manufactured, and which it has not the most implicit confidence will give entire satisfaction. By faithfully and persistently pursuing this course, and improving rather than decreasing the quality and condition of our fertilizers have we been enabled to constantly increase the sales of our fertilizers. We could not certainly have enjoyed the confidence of the public to such a marked degree for nearly thirty consecutive years unless we had paid the strictest attention to the maintenance of the high standard of our goods, and to this policy persistently pursued we chiefly attribute our success. By the continuance of the same course we hope to long merit the patronage of the agricultural public, which has been so liberally extended to us in the past.

BRADLEY FERTILIZER CO.

January 1, 1890.

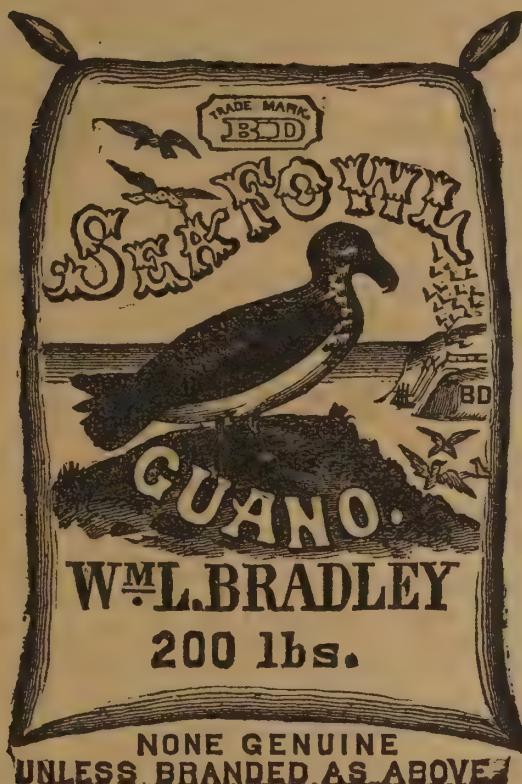


1890											
Moon's Phases			BOSTON.			NEW YORK.			WASH'TON.		
			D. H. M.			H. M.			H. M.		
F. M.			5 4 40 M.			4 28 M.			4 16 M.		
L. Q.			12 6 9 M.			5 57 M.			5 45 M.		
N. M.			19 3 21 M.			3 9 M.			2 57 M.		
F. Q.			27 0 7 M.			11 55 A.			11 43 A.		
D. M.			HISTORICAL EVENTS.								
D. W.											
1	Tu	♂ ♀ ☾. Santa Ana pres., 1833	5	43	6 26	4 22	5	44	6 24	4 18	
2	W	Prof. Morse died, 1872	5	41	6 27	4 50	5	42	6 26	4 47	
3	Th	First Whitechapel Murder, 1888	5	39	6 28	5 16	5	41	6 27	5 14	
4	Fr	☺ Good Friday	5	38	6 29	5 41	5	39	6 28	5 40	
5	Sa	☹ 5th. ☽ ☾	5	36	6 30	rises	5	37	6 29	rises	
6	S	Battle of Shiloh, 1862	5	34	6 31	8 2	5	36	6 30	8 0	
7	M	Earthquake in Mexico, 1845	5	33	6 32	9 12	5	34	6 31	9 9	
8	Tu	♂ ☽ ☉ superior	5	31	6 33	10 25	5	32	6 32	10 20	
9	W	♂ ☽ ☾. Lee surrendered, 1865	5	29	6 34	11 36	5	31	6 33	11 31	
10	Th	☾ in ☉. T. H. Benton died, 1858	5	28	6 36	morn	5	29	6 34	morn	
11	Fr	☾ Battle of Ravenna, 1512 ☾	5	26	6 37	0 42	5	28	6 35	0 36	
12	Sa	☾ 12th. H. Clay born, 1777	5	24	6 38	1 41	5	26	6 36	1 35	
13	S	♂ ☽ ☾: ☽ in ☉: ☾ in perigee	5	23	6 39	2 32	5	25	6 37	2 27	
14	M	♂ ☽ ☉. Dr. Scott died, 1821	5	21	6 40	3 15	5	23	6 38	3 11	
15	Tu	Matthew Arnold died, 1888	5	19	6 41	3 50	5	21	6 39	3 47	
16	W	French evacuate Mexico, 1867	5	18	6 42	4 21	5	20	6 40	4 19	
17	Th	Franklin died, 1790	5	16	6 44	4 49	5	18	6 41	4 48	
18	Fr	☽ in perihelion	5	15	6 45	5 15	5	17	6 42	5 15	
19	Sa	☺ 19th. ☽ ☽ ☾	5	13	6 46	sets	5	15	6 43	sets	
20	S	♂ ☽ ☾. Chas. Darwin died, 1882	5	12	6 47	8 23	5	14	6 44	8 20	
21	M	♂ ☽ ☾. Santa Ana capt., 1836	5	10	6 48	9 29	5	13	6 45	9 25	
22	Tu	♂ stationary <i>Sol. Hen</i>	5	8	6 49	10 32	5	11	6 46	10 27	
23	W	♂ in ☉: ☾ in ☉. St. George	5	7	6 50	11 31	5	10	6 47	11 25	
24	Th	Daniel Defoe died, 1731 ☾	5	5	6 51	morn	5	8	6 48	morn	
25	Fr	☽ in ☉: ☽ ☽ ☽. St. Mark	5	4	6 52	0 24	5	7	6 49	0 18	
26	Sa	☹ 26th. ☾ in apogee	5	2	6 53	1 10	5	5	6 50	1 4	
27	S	R. W. Emerson died, 1882	5	1	6 54	1 49	5	4	6 51	1 44	
28	M	♂ ♀ ☾: ☽ gr. hel. lat. N.: ♀ stat.	5	0	6 56	2 22	5	3	6 52	2 18	
29	Tu	Macready died, 1873	4	58	6 57	2 51	5	1	6 53	2 48	
30	W	☐ ☽ ☉. Ohio admitted, 1802	4	57	6 58	3 18	5	0	6 54	3 16	



"BD" SEA-FOWL GUANO.

Always
Uniform
in
Quality,
Condition
and
Value.



The Only
Original
Guano
with
Bird
Trade-Mark

THIS CELEBRATED GUANO was first introduced into the United States in the year 1863, from which time to the present it has rapidly gained in popularity wherever used, having given *universal satisfaction*. Containing, as it does, *all its elements of plant-food in the best proportions and the most available forms* to meet the requirements of the growing crops, it is by far the best guano in the market for general use upon all crops. Strictly upon its *own intrinsic merits*, it has gained a reputation which has ever been the envy of its competitors; in fact, so marked has been its success that its name and trade-mark (the bird) have been copied by our competitors, who, by a slight change in the name or device, have sought to gain a share of the Sea-Fowl patronage, from those who may not detect the deception. Such imitations only add additional proof to the *universal popularity* of this brand. Every purchaser should see that each sack bears the letters "**BD**" and the *original brand* as per fac-simile of bag above. Every sack bears the guaranteed analysis, and is warranted by

BRADLEY FERTILIZER CO., BOSTON,
SOLE PROPRIETORS U.S.A.



1890													
Moon's Phases		BOSTON.		NEW YORK.		WASH'TON.		LATITUDE			LATITUDE		
		D. H. M.		H. M.		H. M.		Of Boston; New England States, State of N. York, Lower Michigan, North. Illinois, Wisconsin and Iowa			Of N. York City; Philadelphia, State of N. Jersey, Conn., Penn., Maryland, Dela., Virginia and Carolina.		
		F. M.		4 13 A.		4 1 A.							
		L. Q.		11 11 37 M.		11 13 M.							
		N. M.		18 3 34 A.		3 22 A.							
		F. Q.		26 5 50 A.		5 38 A.							
D. M.	D. W.	HISTORICAL EVENTS.											
1	Th	St. Philip and St. James											
2	Fr	♂♂♂. Battle of Lutzen, 1813											
3	Sa	♂♂♂. Mahomet II. d., 1481											
4	S	☾ 4th. Cronin murd., 1889											
5	M	☾ ♀♀♂											
6	Tu	♂ gr. elong. E. 21° 18'. ♂♂♂											
7	W	♂ in ♀. Gen. Worth died, 1849											
8	Th	♂ in perigee											
9	Fr	♂♂♀. John Brown born, 1800											
10	Sa	♂ 24. Louis XV. died, 1774											
11	S	☾ 11th. T. B. Read d., 1872											
12	M	☾ And. Jackson born, 1763											
13	Tu	Slavery abolished in Brazil, 1888											
14	W	Minnesota admitted, 1858											
15	Th	Ascension Day											
16	Fr	Vendome Column destroyed, '71											
17	Sa	☐ h ☉. Lopez in Cuba, 1850											
18	S	☾ 18th. ♂ stat.: ♂♂♂											
19	M	☾ ♂♂♂											
20	Tu	♂♀♂: ♂ in ♀											
21	W	Battle of Essling, 1809											
22	Th	♂ in ♀											
23	Fr	Prussians enter Paris, 1871											
24	Sa	♂♂♂: ♂ in apogee											
25	S	♂ h ♂. Paley died, 1805											
26	M	☾ 26th. Dantzic taken, 1807											
27	Tu	☾ 8 ♂♂											
28	W	♀ in perihelion											
29	Th	♂♂♂ inferior											
30	Fr	♂♂♂. Joan of Arc burned, 1431											
31	Sa	☐ stationary											

BRADLEY'S AMMONIATED DISSOLVED BONES

THIS FERTILIZER has been extensively used for many years, and given universal satisfaction on all crops. Where a quicker acting fertilizer is required than ground bone, Bradley's Ammoniated Dissolved Bones is recommended. The Bone Phosphate, having been treated with acid, is immediately available as plant-food, and thus readily assimilated by the young rootlets of the plant. It is, therefore, much quicker acting than ground bone, and, for many crops and soils, is far superior. In addition to the ammonia and phosphoric acid, of which it contains a goodly proportion, it also contains considerable *potash*, which makes it a complete fertilizer for all crops. It has been very extensively used in New York State for growing hops, wheat, rye, and barley, and seems peculiarly adapted to the wants of these crops. It is *quick-acting*, and a *large crop producer*. Being *fine* and *dry*, it *drills perfectly*.

For the price, it is one of the most economical fertilizers in use. Before investing in any of the cheaper phosphates, farmers will consult their own interests by ascertaining the price of this brand from our local agents. It is put up in strong sacks of two hundred pounds, and every sack bears the guaranty of the manufacturers.

Bradley's Fertilizers are ALWAYS RELIABLE, and are sold strictly upon their OWN INTRINSIC MERITS. THEY HAVE STOOD THE TEST OF TWENTY-NINE YEARS.



1890													
Moon's Phases		BOSTON.		NEW YORK.		WASH'TON.		LATITUDE			LATITUDE		
		D. H. M.		H. M.		H. M.		Of Boston: New Eng-land States, State of N. York, Lower Mich-igan, North, Illinois, Wisconsin and Iowa			Of N. York City: Phil-adelphia, State of N. Jersey, Conn., Penn., Maryland, Dela., Vir-ginia and Carolina		
F. M.	3 1 50 M.	1 38 M.		1 26 M.									
L. Q.	9 5 6 A.	4 54 A.		4 42 A.									
N. M.	17 5 14 M.	5 2 M.		4 50 M.									
F. Q.	25 9 9 M.	8 57 M.		8 45 M.									
D. M.	D. W.	HISTORICAL EVENTS.					Sun rises	Sun sets	Moon sets	Sun rises	Sun sets	Moon sets	
1	S	♂ in aphelion					H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	
2	M	 ♂♂♂. Garibaldi d., 1882					4 26	7 30	3 27	4 31	7 24	3 30	
3	Tu	 3d. ♀ in ♀					4 25	7 30	4 0	4 30	7 25	4 4	
4	W	♂ nearest to the earth					4 25	7 31	rises	4 30	7 26	rises	
5	Th	♂ in perigee. <i>Corpus Christi</i>					4 24	7 32	9 25	4 30	7 27	9 19	
6	Fr	♂♂♂. Memphis taken, 1862					4 24	7 33	10 25	4 29	7 27	10 19	
7	Sa	Washington commander, 1775					4 24	7 33	11 15	4 29	7 28	11 10	
8	S	Douglas Jerrold died, 1857					4 23	7 34	11 56	4 29	7 28	11 52	
9	M	 9th. Chas. Dickens d., 1870					4 23	7 35	morn	4 29	7 29	morn	
10	Tu	 ♂♂♂					4 23	7 35	0 29	4 28	7 30	0 26	
11	W	♂ stationary. <i>St. Barnabas</i>					4 22	7 36	0 58	4 28	7 30	0 56	
12	Th	Massacre at Paris, 1418					4 22	7 36	1 24	4 28	7 31	1 24	
13	Fr	Maryland Charter, 1633					4 22	7 37	1 49	4 28	7 31	1 50	
14	Sa	Henry Vane executed, 1662					4 22	7 37	2 14	4 28	7 32	2 16	
15	S	♂♂♂: ♂♂♂					4 22	7 38	2 41	4 28	7 32	2 44	
16	M	 Marlborough died, 1722					4 22	7 38	3 11	4 28	7 32	3 15	
17	Tu	 17th. ♀ in ♀					4 22	7 38	3 46	4 28	7 33	3 51	
18	W	Cyclone in Iowa, 1882					4 22	7 39	sets	4 28	7 33	sets	
19	Th	♂♀♂: ♀ gr. hel. lat. N.					4 22	7 39	9 0	4 28	7 33	8 54	
20	Fr	♂ in apogee					4 23	7 39	9 45	4 28	7 34	9 39	
21	Sa	☉ ent. ☾. <i>Summer begins</i>					4 23	7 40	10 23	4 28	7 34	10 18	
22	S	♂ h ♀. Revolt in Paris, 1848					4 23	7 40	10 55	4 29	7 34	10 51	
23	M	Akenside died, 1770					4 23	7 40	11 23	4 29	7 34	11 20	
24	Tu	 <i>St. John, Baptist</i>					4 23	7 40	11 48	4 29	7 35	11 46	
25	W	25th. Isabella abdic., 1870					4 24	7 40	morn	4 29	7 35	morn	
26	Th	♂♂♂. Pizarro died, 1541					4 24	7 40	0 11	4 30	7 35	0 10	
27	Fr	Mississippi Bubble burst, 1720					4 24	7 40	0 34	4 30	7 35	0 34	
28	Sa	Battle of Monmouth, 1778					4 25	7 40	0 58	4 30	7 35	0 59	
29	S	♂♂♂. <i>St. Peter and St. Paul</i>					4 25	7 40	1 24	4 31	7 35	1 26	
30	M	♂ stationary					4 25	7 40	1 54	4 31	7 35	1 57	
...	...						4 26	7 40	2 30	4 32	7 35	2 35	



FARMERS' NEW METHOD FERTILIZER.

IN SOME SECTIONS of the country where large quantities of fertilizers are used, low-priced fertilizers have been introduced as a means of obtaining trade, attended in some cases with fairly good results, though this has been the exception rather than the rule. The chief cause of the failure of such fertilizers is due to their being *incomplete and poorly balanced* in the proportions of their plant-food elements. Acid phosphates or acid phosphates with potash have been used, and the best results of course are not to be expected from such "one-sided" fertilizers. A *complete fertilizer* for general use is by far the most satisfactory on all soils and crops.

With a view to meeting this demand for a low-priced fertilizer, and at the same time to furnish an article that would *give satisfaction*, we several years ago introduced the Farmers' New Method Fertilizer, *containing phosphoric acid, ammonia, and potash*; less ammonia than our standard brands, but with a little more potash and a liberal percentage of available phosphoric acid. This fertilizer has been extensively used on general crops, especially grain, with most gratifying results. Containing as it does *all the requisite elements of plant-food*, it is a *complete* fertilizer, and can, therefore, be safely used upon all crops, without the risk of failure attendant upon the use of *incomplete* fertilizers, containing only one or two of the important elements of plant-food, like the majority of low-priced fertilizers.

Farmers' New Method Fertilizer is the *best general fertilizer* that is offered to the public at an *equivalent price*. It is thoroughly manufactured from first-class fertilizing materials, and *is in fine mechanical condition, and drills perfectly*.

As a crop-producer, Farmers' New Method Fertilizer stands unrivalled.



1890									
Moon's Phases		BOSTON.		NEW YORK.		WASH'TON		LATITUDE	
F. M.	2 9 39 M.	9 27 M.	9 15 M.	Of Boston: New England States, State of N. York, Lower Michigan, North. Illinois, Wisconsin and Iowa		Of N. York City: Philadelphia, State of N. Jersey, Conn., Penn., Maryland, Dela. Virginia and Carolina		LATITUDE	
L. Q.	8 11 59 A.	11 47 A.	11 35 A.					Sun rises	
N. M.	16 8 5 A.	7 53 A.	7 41 A.					Sun sets	
F. Q.	24 10 0 A.	9 48 A.	9 36 A.					Moon sets	
F. M.	31 4 40 A.	4 28 A.	4 16 A.	H. M.		H. M.		H. M.	
D. M.		D. W.		HISTORICAL EVENTS.		Sun rises		Sun sets	
1	Tu	♄ in ♊.	♄ in ♊.	Smithson's Gift, 1836	♄	4 26	7 40	3 16	4 32
2	W	☾ 2d.	☾ in aphelion		☾	4 27	7 40	rises	4 33
3	Th	☾ 2d.	☾ in perigee		☾	4 27	7 40	9 6	4 33
4	Fr	♄ stationary				4 28	7 40	9 51	4 34
5	Sa			Surrender of Algiers, 1830		4 29	7 39	10 29	4 34
6	S			Hayes Expedition sails, 1860		4 29	7 39	11 1	4 35
7	M			Gen. Quitman died, 1858		4 30	7 39	11 28	4 36
8	Tu	☾ 8th.	Ed. Burke b., 1730			4 31	7 38	11 53	4 37
9	W	☾	Braddock's Defeat, 1755			4 31	7 38	morn	4 37
10	Th	♄ in ♋.	Columbus born, 1447			4 32	7 38	0 19	4 38
11	Fr		Gen. Prescott taken, 1777			4 33	7 37	0 45	4 38
12	Sa	♄ ♄.	Battle of Aghrim, 1619			4 33	7 37	1 13	4 39
13	S		Ordinance of 1787 passed			4 34	7 36	1 46	4 40
14	M	☾ 10th.	☾ in ♋			4 35	7 35	2 24	4 40
15	Tu	☾ in perihelion				4 36	7 35	3 8	4 41
16	W	☾ 16th.	♄ ♄			4 37	7 34	sets	4 42
17	Th	☾ ♄ ♄				4 38	7 34	8 22	4 43
18	Fr	☾ in apogee				4 38	7 33	8 57	4 43
19	Sa	♄ ♄.	E. P. Roe died, 1888			4 39	7 32	9 26	4 44
20	S	♄ ♄.	Fuller, Chief Justice, '88			4 40	7 31	9 52	4 45
21	M		Battle of Bull Run, 1861			4 41	7 30	10 15	4 46
22	Tu	♄ ♄ superior				4 42	7 29	10 37	4 47
23	W	♄ ♄.	R. Sherman died, 1793			4 43	7 29	11 0	4 48
24	Th	☾ 24th.	Bolivar born, 1783			4 44	7 28	11 25	4 49
25	Fr	☾ ♄.	Rob. Fulton born, 1765			4 45	7 27	11 52	4 49
26	Sa	♄ ♄.	Portugal a Monarchy, 1139			4 46	7 26	morn	4 50
27	S	☾ in ♊.	M. Montefiore d., 1885			4 47	7 25	0 24	4 51
28	M		Poland dissolved, 1794			4 48	7 24	1 4	4 52
29	Tu	☾ 8 ♄				4 49	7 23	1 54	4 53
30	W	☾ 8 ♄				4 50	7 22	2 55	4 54
31	Th	☾ 31st.	☾ in perig.			4 51	7 21	rises	4 55

[From the New England Homestead.]

HOW FERTILIZERS ARE MADE.

The Inside Workings of a Model Fertilizer Factory.—How the Largest Fertilizer Factory in the World is Operated.—A Plain Description of the Fertilizer Business.

How many farmers have any real idea of how fertilizers are made? Probably not one in a thousand. The notion that the manufacture of commercial fertilizers is a simple process involving but little skill, experience, or capital was formerly very prevalent among farmers. Comparatively few farmers have ever visited a fertilizer factory and studied into the great operations of fertilizer manufacture. To the large body of farmers, therefore, a visit to the largest, most complete, and most systematically conducted fertilizer factory in the world cannot fail to be of deep interest.

The great works of the Bradley Fertilizer Company at North Weymouth, Mass., furnish the subject of our sketch. Approached from any direction, they appear as several huge masses or groups of buildings, three of them with conspicuous towers, the purpose of which will be explained hereafter. These works are situated on a beautiful neck of land nearly surrounded by water, and so free have they been rendered from objectionable odors by the consumption of all gases arising from treatment of the materials with acids and chemicals that land within a quarter of a mile of the factory is sold at fancy prices for summer residences and is already thickly dotted with cottages of those who like to enjoy a few months by the sea.

DISTANT VIEW OF BRADLEY FERTILIZER CO.'S WORKS AT NO. WEYMOUTH (LOOKING EAST).

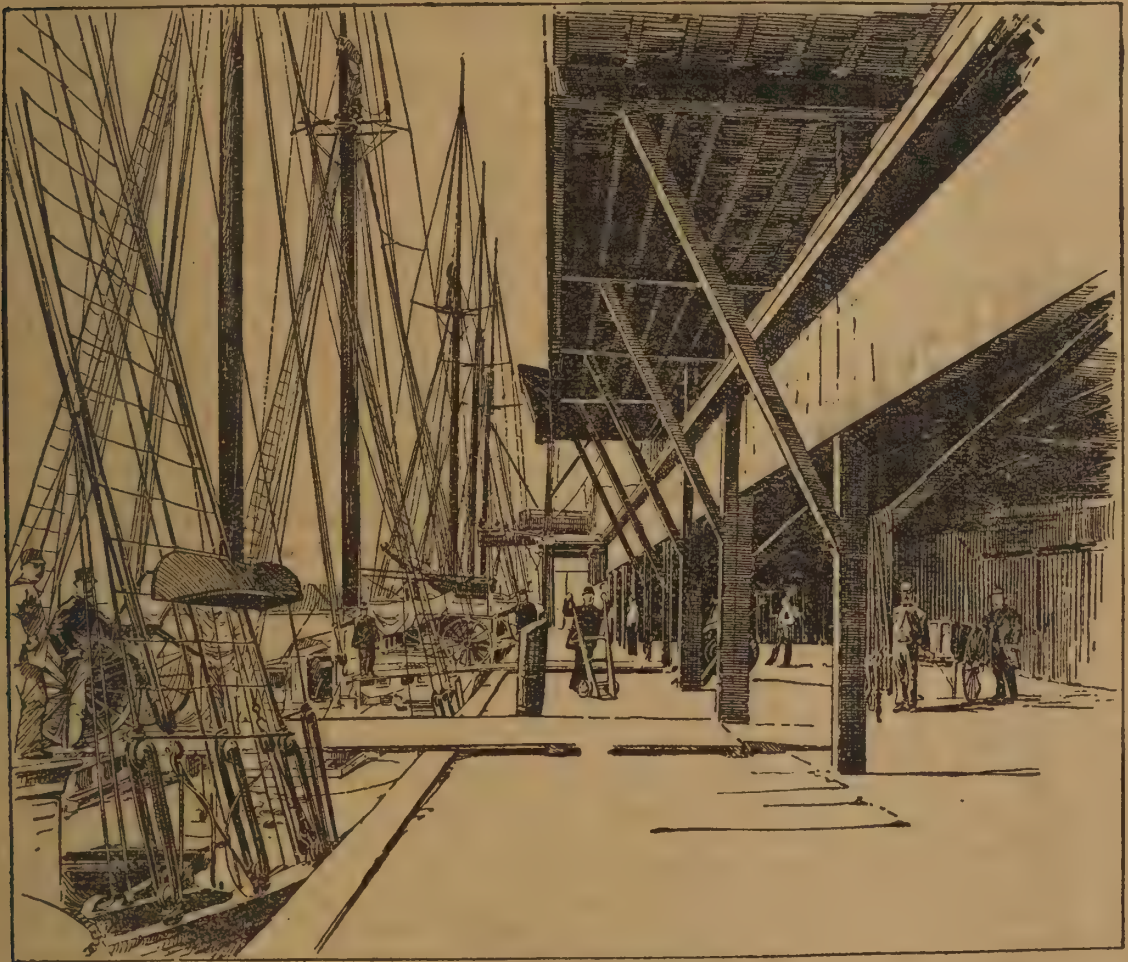




1890													
Moon's Phases		BOSTON.		NEW YORK.		WASH'TON.		LATITUDE			LATITUDE		
		D. H. M.		H. M.		H. M.		Of Boston: New Eng- land States, State of N. York, Lower Mich- igan, North. Illinois, Wisconsin and Iowa			Of N. York City: Phil- adelphia, State of N. Jersey, Conn., Penn., Maryland, Dela., Vir- ginia and Carolina		
L. Q.	7 9 35 M.	9 23 M.		9 11 M.									
N. M.	15 11 35 M.	11 23 M.		11 11 M.									
F. Q.	23 8 36 M.	8 24 M.		8 12 M.									
F. M.	29 11 51 A.	11 39 A.		11 27 A.									
D. M.	D. W.	HISTORICAL EVENTS.						Sun rises	Sun sets	Moon rises	Sun rises	Sun sets	Moon rises
H. M.	H. M.							H. M.	H. M.	H. M.	H. M.	H. M.	H. M.
1	Fr	South America discovered, 1498						4 52	7 20	8 23	4 56	7 16	8 19
2	Sa	Crown Point taken, 1759						4 53	7 18	8 58	4 57	7 15	8 55
3	S	Eugene Sue died, 1857						4 54	7 17	9 28	4 58	7 13	9 27
4	M	Battle of Mackinac, 1814						4 55	7 16	9 56	4 59	7 12	9 56
5	Tu	Gen. Phil. Sheridan died, 1888						4 56	7 15	10 22	5 07	7 11	10 23
6	W	Ben. Jonson died, 1637						4 57	7 14	10 48	5 17	7 10	10 50
7	Th	 7th. Geo. Rapp died, 1847						4 58	7 12	11 16	5 27	7 9	11 20
8	Fr	 ♄ ♀ ♄						4 59	7 11	11 48	5 37	7 7	11 53
9	Sa	♄ ♀ ♄. Gen. Lyon killed, 1861						5 07	7 10	morn	5 47	7 6	morn
10	S	♄ in ♏. Daguerre died, 1851						5 17	7 8	0 24	5 57	7 5	0 29
11	M	Lopez in Cuba, 1857						5 27	7 7	1 5	5 67	7 4	1 11
12	Tu	Louis XVI. dethroned, 1792						5 37	7 6	1 53	5 77	7 2	1 59
13	W	Jeremy Taylor died, 1667						5 47	7 4	2 47	5 87	7 1	2 53
14	Th	♄ in apogee						5 57	7 3	3 44	5 97	7 0	3 49
15	Fr	 15th. ♀ in ♍						5 77	7 1	sets	5 106	7 58	sets
16	Sa	 ♄ ♄ ♄						5 87	7 0	7 56	5 116	7 57	7 53
17	S	♄ ♀ ♄. Admiral Blake d., 1657						5 96	6 58	8 20	5 126	7 55	8 18
18	M	♄ in ♍. Rienzi crowned, 1347						5 106	6 57	8 43	5 136	7 54	8 42
19	Tu	♄ ♀ ♄. Aug. Cæsar died, 14						5 116	6 55	9 5	5 146	7 52	9 5
20	W	♄ ♄ ♄. Battle of Saragossa, 1710						5 126	6 54	9 28	5 156	7 51	9 30
21	Th	Prof. Tyndall born, 1820						5 136	6 52	9 53	5 166	7 50	9 56
22	Fr	 Dr. Gall died, 1828						5 146	6 51	10 22	5 176	7 48	10 26
23	Sa	23d. Cuvier born, 1769						5 156	6 49	10 57	5 186	7 47	11 2
24	S	♄ ♄ ♄. St. Bartholomew						5 166	6 48	11 41	5 196	7 45	11 47
25	M	James Watt died, 1819						5 176	6 46	morn	5 206	7 43	morn
26	Tu	Battle of Cressy, 1346						5 186	6 44	0 36	5 216	7 42	0 42
27	W	♄ ♄ ♄. Silas Wright died, 1847						5 196	6 43	1 41	5 226	7 40	1 47
28	Th	♄ in aphelion						5 206	6 41	2 55	5 236	7 39	3 0
29	Fr	 29th. ♄ in perigee						5 216	6 39	4 15	5 236	7 37	4 19
30	Sa	 ♄ ♄ ♄: ♄ ♄ ♄						5 226	6 38	rises	5 246	7 36	rises
31	S	San Sebastian stormed, 1813						5 236	6 36	7 53	5 256	7 34	7 52



Upon near approach, the magnitude of the factory buildings becomes more and more impressive. The three great buildings in the foreground, which it is learned are devoted to the manufacture of sulphuric acid, of themselves form a notable feature. Beyond these are the fertilizer factory buildings proper, together with many detached structures consisting of storage houses, blacksmith shops, machine shops, bag



SECTION OF WHARF FRONT.¹

factory, and other buildings for special departments required to keep such a mammoth establishment in operation and repair. Besides the factory buildings there are situated on the property of the company large boarding houses for the laborers, barns for live stock and crops, cottages for foremen and skilled operatives, tenements, etc., making quite a colony and occupying about fifty acres of land. There are over eight hundred feet of wharf frontage, and the water is of sufficient depth to accommodate all ordinary freight-carrying vessels.



1890											
Moon's Phases			BOSTON.			NEW YORK.			WASH'TON		
L. Q.			5	10	45 A.	10	33 A.	10	21 A.		
N. M.			14	3	9 M.	2	57 M.	2	45 M.		
F. Q.			21	5	21 A.	5	9 A.	4	57 A.		
F. M.			28	8	16 M.	8	4 M.	7	52 M.		
D. M.			LATITUDE								
D. W.			H. M.			H. M.			H. M.		
			Of Boston:			New England States, State of N. York, Lower Michigan, North. Illinois, Wisconsin and Iowa			Of N. York City: Philadelphia, State of N. Jersey, Conn., Penn., Maryland, Dela., Virginia and Carolina.		
			Sun rises			Sun sets			Moon rises		
			H. M.			H. M.			H. M.		
1	M		5	24	6	34	8	19	5	26	6
2	Tu		5	26	6	33	8	46	5	27	6
3	W		5	27	6	31	9	15	5	28	6
4	Th		5	28	6	29	9	46	5	29	6
5	Fr		5	29	6	28	10	21	5	30	6
6	Sa		5	30	6	26	11	2	5	31	6
7	S		5	31	6	24	11	49	5	32	6
8	M		5	32	6	22	morn		5	33	6
9	Tu		5	33	6	21	0	41	5	34	6
10	W		5	34	6	19	1	37	5	35	6
11	Th		5	35	6	17	2	37	5	36	6
12	Fr		5	36	6	15	3	38	5	37	6
13	Sa		5	37	6	14	4	31	5	38	6
14	S		5	38	6	12	sets		5	39	6
15	M		5	39	6	10	7	10	5	40	6
16	Tu		5	40	6	8	7	32	5	41	6
17	W		5	41	6	7	7	57	5	42	6
18	Th		5	43	6	5	8	25	5	43	6
19	Fr		5	44	6	3	8	58	5	44	6
20	Sa		5	45	6	1	9	37	5	45	6
21	S		5	46	6	0	10	25	5	46	5
22	M		5	47	5	58	11	25	5	47	5
23	Tu		5	48	5	56	morn		5	48	5
24	W		5	49	5	54	0	34	5	49	5
25	Th		5	50	5	52	1	49	5	50	5
26	Fr		5	51	5	51	3	7	5	51	5
27	Sa		5	52	5	49	4	25	5	52	5
28	S		5	53	5	47	rises		5	53	5
29	M		5	54	5	45	6	45	5	54	5
30	Tu		5	56	5	44	7	13	5	55	5

D. M.			D. W.			HISTORICAL EVENTS.					
1	M					Louis XIV. died, 1715					
2	Tu					♂ ♀ ☉. Fire in London, 1666					
3	W					♂ gr. elong. E. 27° 5'					
4	Th					Gen. Morgan killed, 1864					
5	Fr					5th. ♂ ♀ ☾					
6	Sa					☾ in ♍					
7	S					Battle of Borodino, 1812					
8	M					South Sea Bubble, 1710					
9	Tu					☾ stationary					
10	W					☾ in apogee					
11	Th					America discovered, 1492					
12	Fr					♂ ♀ ☾. R. A. Proctor d., 1888					
13	Sa					U. S. Constitution ratified, 1788					
14	S					14th. Wellington d., 1852					
15	M					♂ ♀ ☾					
16	Tu					♂ stationary: ♂ ☾ ☾					
17	W					♂ gr. hel. lat. S.: ♂ ♀ ☾					
18	Th					♀ in aphelion					
19	Fr					Battle of Stillwater, 1777					
20	Sa					☾ in ♊. N. Y. Panic, 1873					
21	S					21st. St. Matthew					
22	M					☉ ent. ♋. Autumn begins					
23	Tu					♀ gr. elong. E. 46° 34': ♂ ♀ ☾					
24	W					King of Portugal died, 1834					
25	Th					First American Newspaper, 1690					
26	Fr					☾ in perigee					
27	Sa					♂ gr. hel. lat. S.					
28	S					28th. ♀ stationary					
29	M					Michaelmas Day					
30	Tu					Pompey's Triumph, 61 B. C.					



Lighters are owned and employed by the company to transport between Boston and the factory the raw materials and manufactured products coming and going by rail or ocean steamers. This single department of transportation is of itself a large business, a fleet of seven lighters with a capacity of two to three hundred tons each being employed, which are towed by the steam tug Peter B. Bradley, one of the largest and most powerful towboats in Boston harbor.



THE COMPANY'S TUG, "PETER B. BRADLEY."

Entering the factory yard, one comes first to the business office, where all the factory accounts are kept in the most systematic manner. Here we meet Mr. Curtiss, the general superintendent, who has occupied his present position for nearly twenty-four years, and has probably had a larger practical experience in the manufacture of chemical fertilizers than any other man in the United States. Being a stockholder and director in the company, Mr. Curtiss has a personal interest in seeing that the fertilizers are properly manufactured, and that the high standard of quality and condition of all goods is fully maintained. Next to the office is the chemist's laboratory, a corner of which is illustrated in the accompanying engraving. Mr. Benson, a graduate of the Massachusetts Agricultural College, is the chemist and he also superintends the manufacture of sulphuric acid. The chemist is one



OCTOBER

1890

Moon's Phases	BOSTON.			NEW YORK.	WASH'TON.	LATITUDE			LATITUDE		
	D.	H.	M.	H. M.	H. M.	Of Boston: New England States, State of N. York, Lower Michigan, North. Illinois, Wisconsin and Iowa			Of N. York City: Philadelphia, State of N. Jersey, Conn., Penn., Maryland, Dela., Virginia and Carolina.		
L. O.	5	3	39 A.	3 27 A.	3 15 A.						
N. M.	13	6	21 A.	6 9 A.	5 57 A.						
F. O.	21	0	52 M.	0 40 M.	0 28 M.						
F. M.	27	6	58 A.	6 46 A.	6 34 A.						
D. M.	D. W.	HISTORICAL EVENTS.				Sun rises	Sun sets	Moon rises	Sun rises	Sun sets	Moon rises
						H. M.	H. M.	H. M.	H. M.	H. M.	H. M.
1	W	Queen Mary crowned, 1554				5 57	5 42	7 42	5 56	5 42	7 46
2	Th	♂ ♀ ♄. Sam. Adams died, 1803				5 58	5 40	8 16	5 57	5 41	8 21
3	Fr	♄ in ♏. Modocs executed, 1873				5 59	5 38	8 56	5 58	5 39	9 2
4	Sa	Belgium independent, 1830				6 0	5 37	9 41	5 59	5 38	9 47
5	S	♂ 5th. Tecumseh killed, 1813				6 1	5 35	10 32	6 0	5 36	10 38
6	M	♂ in ♏				6 2	5 33	11 27	6 1	5 34	11 33
7	Tu	♂ stationary				6 3	5 32	morn	6 2	5 33	morn
8	W	♄ in apogee				6 4	5 30	0 25	6 3	5 31	0 30
9	Th	Harriet Hosmer born, 1830				6 6	5 28	1 26	6 5	5 29	1 30
10	Fr	♂ ♀ ♄: ♀ gr. hel. lat. S.				6 7	5 27	2 28	6 6	5 28	2 31
11	Sa	♂ in perihelion				6 8	5 25	3 30	6 7	5 26	3 32
12	S	♂ ♀ ♄. Rob. E. Lee died, 1870				6 9	5 23	4 33	6 8	5 25	4 34
13	M	♂ 13th. - ♂ ♂ ♄				6 10	5 22	5 36	6 9	5 23	5 36
14	Tu	Dr. Le Moyne died, 1879				6 12	5 20	sets	6 10	5 22	sets
15	W	♂ gr. elong. W. 18° 10'				6 13	5 18	6 27	6 11	5 20	6 30
16	Th	Napoleon at St. Helena, 1815				6 14	5 17	6 57	6 12	5 19	7 1
17	Fr	♂ ♀ ♄; ♄ in ♏				6 15	5 15	7 35	6 13	5 17	7 40
18	Sa	St. Luke, Evangelist				6 16	5 14	8 21	6 14	5 16	8 27
19	S	King John died, 1216				6 17	5 12	9 17	6 15	5 14	9 23
20	M	♂ ♂ ♄: ♂ ♂ ♄				6 18	5 11	10 21	6 16	5 13	10 27
21	Tu	♂ 21st. ♂ ♀ ♄: ♂ in perih.				6 20	5 9	11 33	6 17	5 11	11 38
22	W	Hessians defeated, 1777				6 21	5 8	morn	6 19	5 10	morn
23	Th	Earthquake in Hungary, 1736				6 22	5 6	0 48	6 20	5 8	0 52
24	Fr	♄ in perigee				6 23	5 5	2 4	6 21	5 7	2 7
25	Sa	Philadelphia settled, 1682				6 24	5 3	3 19	6 22	5 6	3 21
26	S	♂ ♀ ♄. Von Moltke born, 1800				6 26	5 2	4 34	6 23	5 4	4 34
27	M	♂ 27th. Penn arrived, 1682				6 27	5 0	5 47	6 24	5 3	5 46
28	Tu	St. Simon and St. Jude				6 28	4 59	rises	6 25	5 2	rises
29	W	♂ ♀ ♄. John Adams born, 1735				6 29	4 58	6 12	6 26	5 0	6 16
30	Th	♂ ♀ ♄: ♄ in ♏				6 31	4 56	6 49	6 28	4 59	6 54
31	Fr	Hallowe'en				6 32	4 55	7 32	6 29	4 58	7 38



of the most important employes of a complete fertilizer factory. Every purchase of materials for the manufacture of fertilizers is sampled and analyzed by him so that the chemical composition of all materials employed is accurately ascertained. Not only that, but the chemist analyzes the fertilizer in its various stages of manufacture, so that any possible error in the process will be promptly checked. Though errors are extremely rare in such a well-organized institution,



A CORNER IN THE CHEMIST'S LABORATORY.

this constant supervision of the chemist is absolute assurance against any mistakes passing undetected.

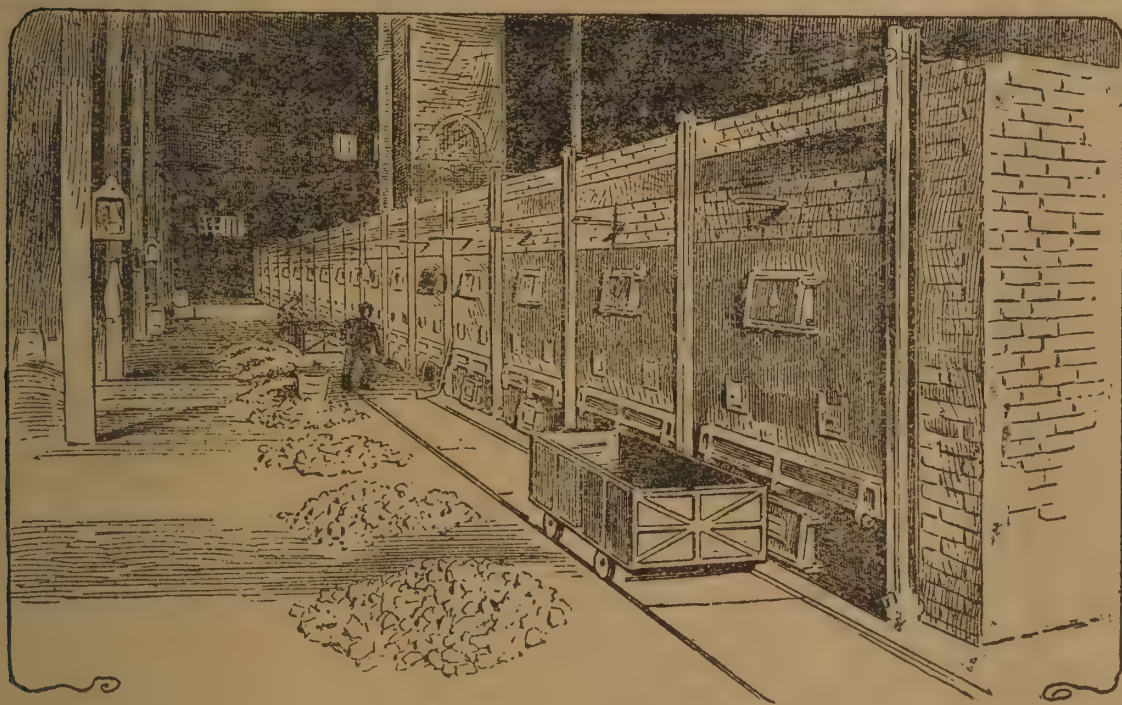
But the chemist's duties do not stop here. After the fertilizer is completed it is his duty to sample it most thoroughly and make frequent analyses to make sure that the completed product is more than up to the high standard guaranteed. It is only by such constant, systematic, and scientific supervision that the high standard quality of these goods can be absolutely insured, so that their use shall be satisfactory on all crops and soils. Leaving the chemist in his laboratory



1890									
Moon's Phases		BOSTON.		NEW YORK.	WASH'TON	LATITUDE			LATITUDE
L. O.	4 11 29 M.	4 11 29 M.	11 17 M.	11 5 M.	Of Boston: New England States, State of N. York, Lower Michigan, North. Illinois, Wisconsin and Iowa			Of N. York City: Philadelphia, State of N. Jersey, Conn., Penn., Maryland, Dela., Virginia and Carolina.	
N. M.	12 8 53 M.	12 8 53 M.	8 41 M.	8 29 M.					
F. O.	19 8 0 M.	19 8 0 M.	7 48 M.	7 36 M.					
F. M.	26 8 39 M.	26 8 39 M.	8 27 M.	8 15 M.					
D. M.	D. W.	HISTORICAL EVENTS.				Sun rises	Sun sets	Moon rises	Sun rises
H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.
1 Sa		<i>All Saint's Day</i>				6 33	4 54	8 21	6 30
2 S		Josiah Quincy died, 1882				6 34	4 52	9 15	6 31
3 M		Long Parliament, 1640				6 36	4 51	10 13	6 32
4 Tu		4th. Laura Keened., 1873				6 37	4 50	11 13	6 34
5 W		☾ in apogee				6 38	4 49	morn	6 35
6 Th		♂ ♀ ☾. Gen. Hardee died, 1873				6 40	4 48	0 15	6 36
7 Fr		Battle of Prague, 1620				6 41	4 46	1 17	6 37
8 Sa		Warsaw taken, 1794				6 42	4 45	2 19	6 38
9 S		Prince of Wales born, 1841				6 43	4 44	3 21	6 40
10 M		♂ ☾ ☾. Spurzheim died, 1832				6 45	4 43	4 25	6 41
11 Tu		♂ ☾ ☾. Milan Decree, 1807				6 46	4 42	5 31	6 42
12 W		12th. Chaucer died, 1400				6 47	4 41	sets	6 43
13 Th		☾ stationary: ♂ ♂ ♀				6 48	4 40	5 33	6 44
14 Fr		♂ in ☾: ♂ ♀ ☾: ☾ in ☾				6 50	4 39	6 16	6 46
15 Sa		Lord Chatham born, 1708				6 51	4 39	7 10	6 47
16 S		♂ ☾ ☾ superior				6 52	4 38	8 13	6 48
17 M		♂ ♀ ☾: ♂ ♂ ☾				6 53	4 37	9 22	6 49
18 Tu		☾ in perigee				6 55	4 36	10 36	6 50
19 W		19th. Tweed convict., 1873				6 56	4 35	11 51	6 51
20 Th		Battle of Belle Isle, 1759				6 57	4 34	morn	6 53
21 Fr		Ft. Niagara bombaraded, 1812				6 58	4 34	1 5	6 54
22 Sa		Thurlow Weed died, 1882				6 59	4 33	2 18	6 55
23 S		Franklin Pierce born, 1804				7 1	4 32	3 30	6 56
24 M		♂ in aphelion				7 2	4 32	4 42	6 57
25 Tu		Isaac Watts died, 1748				7 3	4 31	5 52	6 58
26 W		26th. ♂ ♀ ☾				7 4	4 31	rises	6 59
27 Th		☾ ♀ ☾: ☾ in ☾				7 5	4 30	5 23	7 0
28 Fr		Earthquake in N. England, 1814				7 6	4 30	6 10	7 1
29 Sa		♂ ☾ ♀. Ohio admitted, 1802				7 7	4 29	7 3	7 2
30 S		<i>St. Andrew</i>				7 8	4 29	8 0	7 3



for the time being, the first feature of the great works to be inspected are the huge establishments in which sulphuric acid is manufactured. These of themselves constitute an enormous business. These acid works comprise several complete and distinct plants, each with its large lead chambers, sulphur burners, towers, pumps, storage tanks, etc., each plant equal in itself to an ordinary-sized factory. Altogether they make one of the largest and most complete acid works in the country. The process of acid manufacturing is a most interesting one. To understand all its details would require a knowledge of chemistry, but the general principle of it is readily explained.



A SET OF SULPHUR BURNERS.

The sulphur, with a given percentage of nitrate of soda, is placed in specially constructed furnaces in which it is burned, and the sulphurous and nitrous fumes are conducted through large flues to the interior of the towers, which form so conspicuous a part of the acid works. These towers are built of heavy sheet lead, lined with fire brick and filled with quartz, and from a reservoir at the top cold sulphuric acid percolates down through this tower well, or "Glover's tower," as it is called. The hot gases from the furnaces forcing their way up through the Glover tower are cooled, and from the tower pass into the large lead chambers. These chambers are enormous rooms



1890											
Moon's Phases		BOSTON.		NEW YORK.	WASH'TON.	LATITUDE			LATITUDE		
L. Q.	4 8 42 M.	8 30 M.	8 18 M.	Of Boston; New England States, State of N. York, Lower Michigan, North. Illinois, Wisconsin and Iowa			Of N. York City: Philadelphia, State of N. Jersey, Conn., Penn., Maryland, Dela., Virginia and Carolina.				
N. M.	11 10 27 A.	10 15 A.	10 3 A.								
F. Q.	18 3 52 A.	3 40 A.	3 28 A.								
F. M.	26 1 13 M.	1 1 M.	0 49 M.								
D. M.	D. W.	HISTORICAL EVENTS.				Sun rises	Sun sets	Moon rises	Sun rises	Sun sets	Moon rises
H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.
1	M	Battle of Nineveh, 627				7 9	4 29	9 0	7 4	4 34	9 5
2	Tu	Cortez died, 1554				7 10	4 28	10 1	7 5	4 33	10 5
3	W.	♂ ♀ ☉ inf.: ☿ in apogee				7 11	4 28	11 2	7 6	4 33	11 5
4	Th	♂ 4th. ♂ ♄				7 13	4 28	morn	7 7	4 33	morn
5	Fr	♂ Van Buren born, 1782				7 14	4 28	0 3	7 8	4 33	0 5
6	Sa	♀ in ♍. St. Nicholas				7 15	4 28	1 5	7 9	4 33	1 6
7	S	♂ ☉ ☿. Newport taken, 1776				7 16	4 28	2 8	7 10	4 33	2 8
8	M	☐ ♄ ☉. Louis Blanc died, 1882				7 17	4 28	3 13	7 11	4 33	3 11
9	Tu	Birmingham, Ala., mob, 1888				7 17	4 28	4 20	7 12	4 33	4 17
10	W	♂ ♀ ☿. R. Hill died, 1842				7 18	4 28	5 30	7 13	4 33	5 26
11	Th	♂ 11th. ☿ in ♊				7 19	4 28	6 42	7 14	4 33	6 37
12	Fr	♂ ☉ ☿				7 20	4 28	sets	7 15	4 33	sets
13	Sa	Drake sailed, 1577				7 21	4 28	6 0	7 16	4 33	6 6
14	S	♂ gr. hel. lat. S.: ☿ in perigee				7 22	4 28	7 10	7 16	4 34	7 16
15	M	♂ ♄ ☿. Prince Albert died, 1861				7 22	4 29	8 25	7 17	4 34	8 30
16	Tu	♂ ♂ ☿. Fire in New York, 1835				7 23	4 29	9 42	7 18	4 34	9 45
17	W	John G. Whittier born, 1807				7 24	4 29	10 57	7 18	4 34	10 59
18	Th	♂ 18th. H. Davy born, 1778				7 24	4 29	morn	7 19	4 35	morn
19	Fr	♂ Rome burnt, 69				7 25	4 30	0 10	7 20	4 35	0 11
20	Sa	United States Bank closed, 1791				7 26	4 30	1 21	7 20	4 36	1 20
21	S	☉ ent. ♍. Winter beg. St. Thom.				7 26	4 31	2 30	7 21	4 36	2 28
22	M	New England settled, 1620				7 27	4 31	3 39	7 21	4 37	3 36
23	Tu	♂ ♄ ☿: ♀ stationary				7 27	4 32	4 48	7 22	4 37	4 44
24	W	☿ in ♍. L. Bacon died, 1881				7 27	4 32	5 56	7 22	4 38	5 51
25	Th	♂ Christmas				7 28	4 33	6 59	7 22	4 38	6 53
26	Fr	♂ 26th. St. Stephen				7 28	4 34	rises	7 23	4 39	rises
27	Sa	♂ gr. el. E. 19° 38'. St. John, Ev.				7 29	4 34	5 48	7 23	4 40	5 54
28	S	♂ stationary. Innocents				7 29	4 35	6 48	7 24	4 40	6 53
29	M	Frigate Java taken, 1812				7 29	4 36	7 49	7 24	4 41	7 53
30	Tu	♂ in apogee				7 29	4 36	8 50	7 24	4 42	8 53
31	W	☉ in perihelion: ♂ ♄ ☿				7 30	4 37	9 52	7 24	4 43	9 54



of sheet lead, each about 150 feet long, 20 feet high, and 25 feet wide, about 150 tons of lead being employed in the construction of each one of these sets of chambers. The sheets of lead of which the walls are composed are melted together at their edges, so that the whole forms one impervious chamber. There is an occasional pane of glass inserted in the walls through which the chemist examines the



A CORNER OF THE BLACKSMITH SHOP.

fumes, the color of which assists him in regulating the process. A certain quantity of steam is admitted into these chambers in connection with the cooled gases, and the result is that the sulphurous fumes gradually condense into the liquid sulphuric acid, just as steam upon cooling condenses into water. The utmost care and system have to be pursued in this whole process. The completed acid is drawn from the chambers into receivers and from them forced by compressed air

REPORTS.

Owing to a lack of space, and because BRADLEY'S FERTILIZERS are so well and favorably known throughout the country that a mass of letters, testifying to their good qualities, is unnecessary, we publish below but a few of the many testimonials that we have had the pleasure of receiving from the hands of our patrons. To all from whom we have received such letters we take this opportunity of expressing our sincere thanks for their kindness in sending us the results of their experience in the use of Bradley's Fertilizers.

Some manufacturers publish comparative tests as well as comparative analyses.

We have received hundreds of letters in which BRADLEY'S FERTILIZERS have been tried side by side with our competitors' goods and pronounced far superior, but such comparative statements we have always scrupulously avoided publishing, as we have never believed in the policy of bolstering up our own business at the expense of our competitors, nor do we believe that anything can be added to the high standing of BRADLEY'S FERTILIZERS by comparisons with others, however favorable to themselves they may be. Many fertilizers which cannot be sold on their OWN MERITS are forced upon the public by a mass of testimony (easily obtained by a little clever management) showing that they are "EQUAL TO BRADLEY'S," which is the favorite argument of our competitors, who thus recognize Bradley's as their standard of comparison.

"Bradley's has proved the best."

CLINTON, N. Y., Dec. 7, 1889.

I have used Bradley's Fertilizers for many years. Have used them side by side with many other grades. I have also made repeated tests by sowing seed in boxes filled with sand, and supplying nourishment to the plant by adding one of several grades of fertilizer to each box; and in all my experience with the different fertilizers, I consider "The Bradley" has proved the best that I have ever used.

S. G. FOOTE.

"Always uniform in quality."

GREENWAY, N. Y., Nov. 6, 1889.

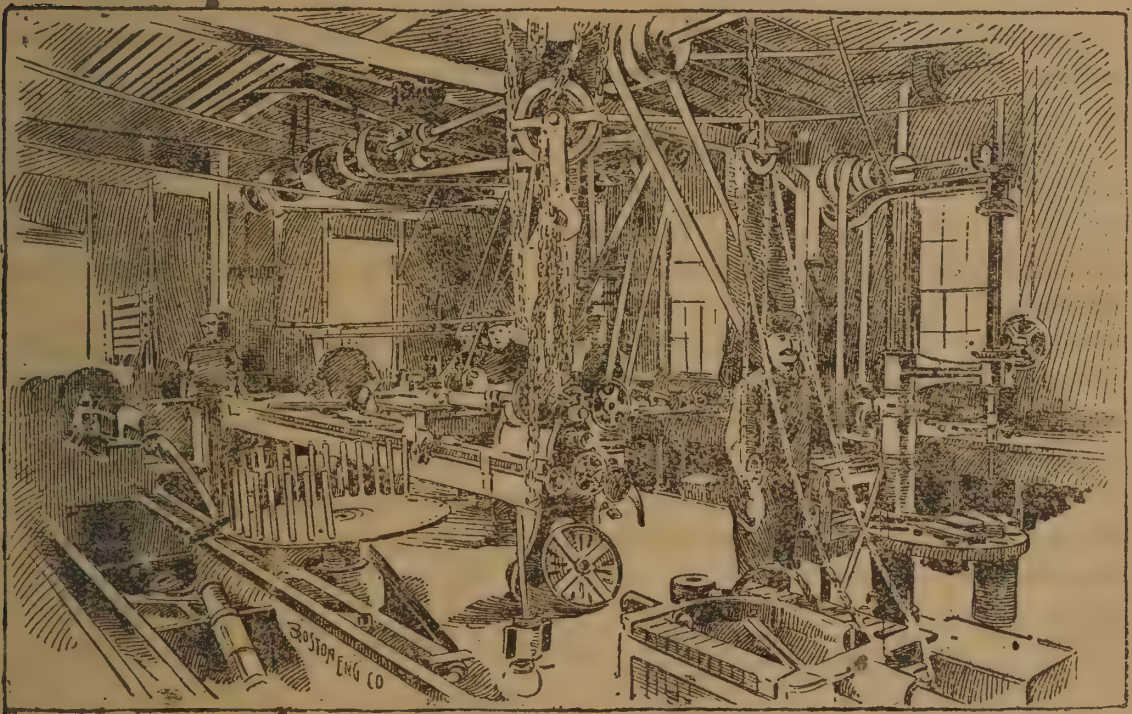
By the use of 200 pounds of your Phosphate per acre, I always reap a large profit on cost. Two years ago I sent you a detailed statement of trial with several different brands, in which Bradley's came out ahead. I find Bradley's Phosphate always uniform in quality and condition.

A. B. BROWN.

to any part of the factory. This acid is used to dissolve the bone phosphate in the raw materials and so render available the plant food that would otherwise require a long period to be sufficiently decomposed in the soil to be assimilated by the plants. The process of superphosphate manufacture is described in a separate article.

THE STORAGE WAREHOUSES.

Before entering the phosphate factory proper, where the actual manufacture of the fertilizers is conducted, a tour of inspection is



A CORNER OF THE MACHINE SHOP.

made of the enormous storehouses for the various raw materials employed. In a large brick building apart from any other are stored thousands of tons of muriate and sulphate of potash, nitrate of soda, ammonite, sulphate of ammonia, and other chemicals and fertilizer ingredients of high grade and great value. In another great warehouse one sees several thousand tons of bone, bone black, tankage, fish-scrap, dried blood, and other fertilizing materials, enough, one would judge, to fertilize all New England. In other parts of these great warehouses are found many thousands of tons of fertilizers in different stages of manufacture.

"A valuable fertilizer for any crop."

EVANS MILLS, N. Y., Oct. 30, 1889.

We, the undersigned farmers of the town of Le Roy, have used Bradley's Phosphate the past season, and find it to be as recommended. It largely increases the crop and improves the quality. We can recommend it as a valuable fertilizer for grain, seeding down, or for any crop where a fertilizer is needed. We believe it to be the *best* in the market.

EDWARD CONVERSE.

ANDREW M. CHILD.

SAMUEL GARDNER.

WILLIAM H. KELLAR.

GEORGE WILSON.

WILLIAM PALMER.

ALEXANDER KANADY.

Corn and Oats.

CLINTON, N. Y., Dec. 7, 1889.

The Bradley Fertilizer has sustained the recommendation of your agent. Applied at the rate of 200 to 250 pounds to the acre, I was enabled two years in succession (1888 and 1889 respectively), to grow a crop of corn on land considered almost worn out, that surprised the neighborhood. Your fertilizer also gave very satisfactory results on oats. Have tried other brands, but am best pleased with "The Bradley." R. P. MITCHELL.

ALBERT VAN DERPOOL, SLINGERLANDS, N. Y., writes:—

I have used your fertilizers, and find them the best I can get after several years' trial.

W. J. LEMEREAUX, SO. BETHLEHEM, N. Y., writes:—

I have experimented very extensively with fertilizers, using one year seven different kinds; I find Bradley's the best, and would use no other.

NEW BERLIN, N. Y., Oct. 21, 1889.

After using four different brands of fertilizers with little or no results, I was induced by a friend to try Bradley's Phosphate, which proved quite satisfactory.

On corn, your fertilizers showed plainly as far as the field could be seen.

On digging potatoes on which I applied it, I found them much larger and smoother than where none was used.

As far as I have tried, I would recommend the Bradley far above all others. JAMES M. ANGELL.

EVANS MILLS, N. Y., Oct. 26, 1889.

Having used your fertilizers on a variety of crops—oats, corn, potatoes, onions, melons, and tomatoes—the past season, I am convinced of their merits. They give the crops a quick start and rapid growth, which not only insures an increased quantity, but also much improves their quality.

WM. W. WILBUR.

Corn and Potatoes.

POTSDAM, N. Y., Nov. 4, 1889.

I have used your fertilizers for the past nine or ten years on corn, and am well satisfied with it. Have also used it on potatoes with good results. I used it on grain last summer for the first time. Am well pleased with your goods on all crops. CORNELIUS MCCARTHY.

MADRID, N. Y., Oct. 15, 1889.

I have used Bradley's Phosphate for a series of years, and am so well satisfied with results that I shall continue to use it. JOHN C. HUGHS.

SPECIAL INDUSTRIES REPRESENTED.

To keep this mammoth establishment in repair requires the constant services of a corps of blacksmiths, machinists, and carpenters, the engravings giving a meagre idea of these various departments. The company maintains a large machine shop in which they not only repair their machinery but also manufacture many mills of their own design.

The bag factory is an important feature of the works. Here the burlap is cut and sewed by machines into bags, on which the brands are printed by steam presses. This is kept running the year round, and hundreds of thousand of the best quality of bags are manufactured yearly.

MAKING THE FERTILIZERS.

THE materials to be dissolved with acid are mixed in large iron mixing pans, that revolve by machinery, into which are put the acid and raw materials, which are thoroughly mixed by the great arms or stirrers of the mixers. After being kept in the mixers a definite time, the materials are dropped to the floor below, there to await the next stage of manufacture. These acid mixings are afterwards run through the mills together with the other materials entering into the complete fertilizer, from which they are conveyed by the machinery to the screens and afterwards dumped into great piles or shipped direct to the market. All raw materials pass through several stages of preparation and manufacture before reaching the finished product, and the visitor is soon convinced that the manufacture of chemical fertilizers is as much of an art, requiring as much practical as well as scientific knowledge and skill, as any other manufacturing industry carried on in this country.

The phosphate factory itself, in which the complete fertilizers are made as above described, is an enormous building of three stories. Three huge engines of 400 horse-power are the principal motors for the great works, and the steam is supplied by a battery of eight very large tubular boilers. There are also eight auxiliary engines in other buildings used for special purposes, all supplied with steam from the main boilers. The photographs of the main engine and boiler rooms give some idea of these important departments, which consume many thousands of tons of coal annually.

Wheat and Corn.

COLTON, N. Y., Oct. 20, 1889.

I have used your fertilizers for about ten years, always with good results. Used another brand for two years, but returned to Bradley's.

I used it for corn at the rate of 400 pounds per acre. The fertilizer pays for itself in the extra amount of fodder.

For wheat, I sowed broadcast 250 pounds per acre on corn land, and got from twenty-five to thirty-five bushels per acre.

D. I. GOODALE.

COOPERSTOWN, N. Y., Oct. 8, 1889.

I have used Bradley's Phosphate for years with many other makes, and have found it superior to any other for all crops.

CHAS. ECKLER.

"Always give universal satisfaction."

COOPERSTOWN, N. Y., Oct. 15, 1889.

For many years Bradley's Fertilizers have been sold at this stand, coming in competition with all the best makes, and we cannot say too much in recommending them, as they always give universal satisfaction.

LATHROP, AUSTIN & BOLTON.

HARTWICK, N. Y., Oct. 10, 1889.

We have used Bradley's Phosphate for many years, testing it with others with good results.

A. E. SILL.

G. W. SILL.

GRAND GORGE, N. Y., Oct. 14, 1889.

Your goods have "filled the bill" the best of any used here this season. Shall want more of them another year.

J. T. R. CLARK.

"Doubled the crops."

BATCHELLERVILLE, N. Y., Oct. 15, 1889.

I can truly say that Bradley's Phosphate has doubled my crops of corn, potatoes, and buckwheat. Can recommend it to all farmers as the most reliable fertilizer.

D. A. TORREY.

India Wheat and Corn.

WEST STOCKHOLM, N. Y., Oct. 20, 1889.

I have used your fertilizer for about eight years, and am perfectly satisfied with the results on crops to which it has been applied, *i.e.*, corn, potatoes, and India wheat. Have tried several other kinds, but found yours much preferable. It nearly doubled my crop of India wheat, and for corn I consider it better than barnyard manure. I apply it to this crop by covering the fertilizer and dropping the corn on top; while for potatoes, I cover the potato and drop the Phosphate on top.

M. W. CLARK.

BATCHELLERVILLE, N. Y., Oct. 15, 1889.

I have used Bradley's Phosphate for several years, and have found it superior to any other that I ever used.

FOSTER NOYES.

"Paid 50 per cent."

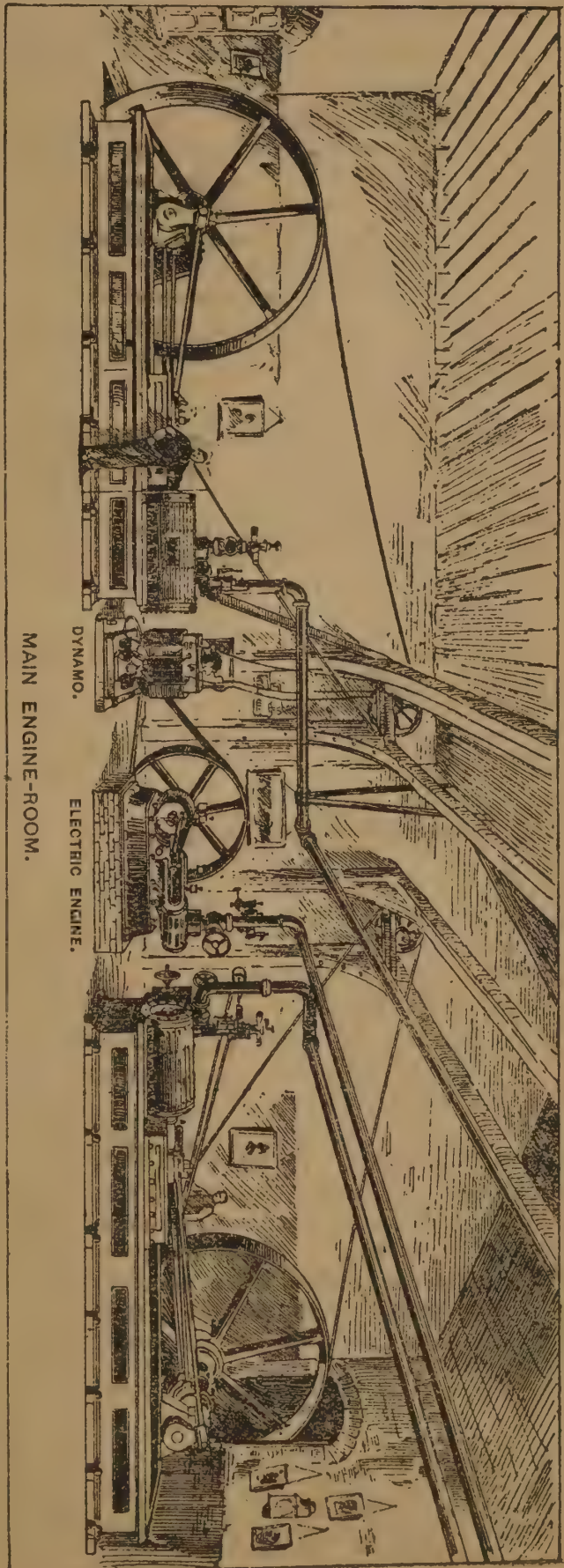
BATCHELLERVILLE, N. Y., Oct. 15, 1889.

Bradley's Fertilizers have done nobly for me. Have used them on various crops, and can say they have paid me at least 50 per cent on the investment.

D. J. GORDON.

The whole establishment is lighted by the Edison incandescent electric lights, an independent plant with powerful high-speed engine being equipped for the purpose. Fire is guarded against by having hydrants connected with the town water works in all parts of the factory yard and buildings, to each of which is attached several hundred feet of hose.

The great engines now employed contrast in a striking manner with the little 10-horse-power engine originally used, which is pointed out to the visitor as showing the small beginning from which the enormous business of the Bradley Fertilizer Company has been built up. Indeed, even the mammoth establishment at North Weymouth gives but a partial idea of their entire business. The product of their various works amounts to more than that of any two or three other manufactories in the United States, and is far greater than that of any other fertilizer company in the world. In the different branches of the business, from 1,200 to 1,400 men are employed, and a capital of several millions of dollars is invested.



MAIN ENGINE-ROOM.

DYNAMO.

ELECTRIC ENGINE.

Rye, Buckwheat, and New Seeding.

MIDDLE FALLS, N. Y., Oct. 25, 1889.

I used 200 pounds of your Phosphate on an acre of clay ground last summer, sowed buckwheat, and got 72 bushels actual measure from the acre. Four or five years ago I sowed the same piece and got only 7 bushels. The piece has had no barnyard manure for twenty-one years.

I have used your Circle Brand Bone and Potash on rye, and have had astonishing crops of grain and straw. Have never used over 200 pounds per acre drilled in with the rye. The soil where I have used it has been mostly clay. On worn-out pasture land I think it is very beneficial. On newly seeded land I got a better catch of seed. This year where I used it on newly seeded land, the clover would have cut a ton to the acre (the seed sown this spring), but I wanted to use the land for pasture and turned my stock on to it.

I have never measured the grain where your fertilizer was sown, as compared with where no fertilizer was used.

I always leave the width of the drill without any fertilizer through the field, and you could see plainly as far as the fertilizer went that the unfertilized portion was not as tall by several inches, and I have found it does not stand the winter as well.

J. S. WILBER.

BATCHELLERVILLE, N. Y., Oct. 15, 1889.

I used Bradley's Phosphate on corn and potatoes this year, and it made at least one-half larger crops of each than where I did not use your Phosphate, — the land was equally as good.

C. V. PERRY.

COLUMBUS, N. Y., Oct. 29, 1889.

I have used your Phosphate the past two years with the best results.

D. L. NORTON.

Seeding down to Grass.

SO. EDMESTON, N. Y., Oct. 28, 1889.

I have used your fertilizers for seeding with oats and stocking down with satisfactory results. I used your fertilizer on part of a piece of potatoes, the other part had a good dressing of barnyard manure. The part with the Phosphate yielded fully one quarter more.

A. L. TUTTLE.

Potatoes — Bradley's Fertilizers prevent wire worms and scab.

COLD SPRING FARM, NEW BERLIN, N. Y., Oct. 28, 1889.

I am pleased to state I have used your fertilizers for five years in the cultivation of potatoes. Have used yours side by side with other goods and with stable manure. Have always got the best results with yours. I can and do cheerfully recommend it to farmers who wish to raise a large crop of potatoes, and free from wire worms and scab. I use one tablespoon heaped to a hill.

J. S. BRADLEY.

LENA, N. Y., Oct. 10, 1889.

I have used Bradley's Fertilizers for years on all field crops, and always with the best of results. Have tried various other brands, but have always found Bradley's superior to any and all others.

E. E. PATTENGILL.

HOME-MIXED FERTILIZERS vs. STANDARD PHOSPHATES.

[From the N. E. Homestead.]

No farmer can make a visit to the Weymouth factory without going away thoroughly convinced of the great superiority of its productions over mixtures made by hand on the farm. Home-mixed fertilizers, even though made from the best of chemicals, are necessarily much inferior in many respects to those compounded under the direction of experienced manufacturers and skilful chemists and finished by suitable machinery. If these home-mixed fertilizers are made from raw bone and sulphuric acid, or from poorly prepared chemicals, they may be absolutely injurious to growing crops. Instances are many of serious damage and the loss of an entire season from the use of chemical fertilizers ignorantly or improperly mixed.

In addition to the thorough system pursued by the Bradley Fertilizer Company, it is noteworthy that they design and build many of their own machines and mills, and in this way turn out a product that is exceptional in its mechanical condition. This is a point to which the greatest possible attention has always been given by this company—a point which the farmer with his home mixing cannot begin to approach in the perfection which is here achieved. If he stops to consider that only a comparatively small amount of fertilizer is applied over an acre, he cannot fail to understand that the goods must be in the finest possible condition, thoroughly mixed and absolutely uniform in quality, if there is to be an even distribution of plant food over the whole field. Dr. C. A. Goesmann, director of the Massachusetts state experiment station, well says, "The mechanical condition of fertilizing material, simple or compound, deserves the most serious consideration of farmers when articles of a similar chemical character are offered for their choice."

The fact that Bradley's Phosphate and all their other brands are not only in a fine mechanical condition, but are also so dry that they can be used in any drill, is another important consideration. The extent to which the fine condition of a fertilizer assists in diffusing plant food through the soil where it is to be taken up by the feeding roots could be discussed at length, but space forbids. Many fertilizing materials in their crude state do not give nearly so good results as they do after being properly treated and manufactured. They may show good percentages of the elements of plant food and still

MT. VISION, N. Y., Oct. 31, 1889.

I have used Bradley's Fertilizers with the best results on all crops, and think there is no other so reliable. I sowed three acres of hill land without the Fertilizer, and got fourteen bushels of buckwheat; sowed the same land with Bradley's Fertilizer, and got ninety bushels.

MARTIN VAN BUREN.

ONEONTA, N. Y., Oct. 31, 1889.

I have used your fertilizers on all crops, and find them perfectly satisfactory.

GEORGE LANE.

Oats.

EVANS MILLS, N. Y., Oct. 28, 1889.

I have used your fertilizers the past year on oats and new seeding with great success. The increase in the oat crop more than paid for your fertilizer, and the seeding is the best I ever had, on land where I have not had a good catch for several years.

AMOS GARDNER.

Wheat.

BINGHAMTON, N. Y., Oct. 10, 1889.

I will give my experience with your fertilizers. I have tried them to my satisfaction, and know they are the best for the soil here. I use about 200 pounds per acre in the drill on all kinds of grain and fodder corn. Last fall I sowed two acres of winter wheat. Having barnyard manure enough for but one-half the piece, I used 200 pounds of your fertilizer on the other half, and all the past summer I could see where the fertilizer was left off, and that is not all, the seeding is far better than on the part where I used barnyard manure.

The extra amount of straw that I get by using your fertilizer pays the bill, and the gain in the seeding and grain goes into my pocket.

J. H. DEYO.

Bradley's proved far superior to six other brands.

LEE, N. Y., Oct. 9, 1889.

I hasten to give you my experience with your valuable fertilizers which I have used for a long time on most all kinds of crops with the most gratifying results. Have used them beside six other brands, and they have proved far superior to all others. I used 200 pounds per acre in the hill for potatoes, and the yield was 350 bushels per acre. For sweet corn your fertilizer is far ahead of stable manure. My soil is a heavy clay loam, and I have seen the effect of your fertilizers for five years after their application. I shall continue using them in preference to all others.

CHAS. MACK.

From the Superintendent of the Society of St. Johnland: —

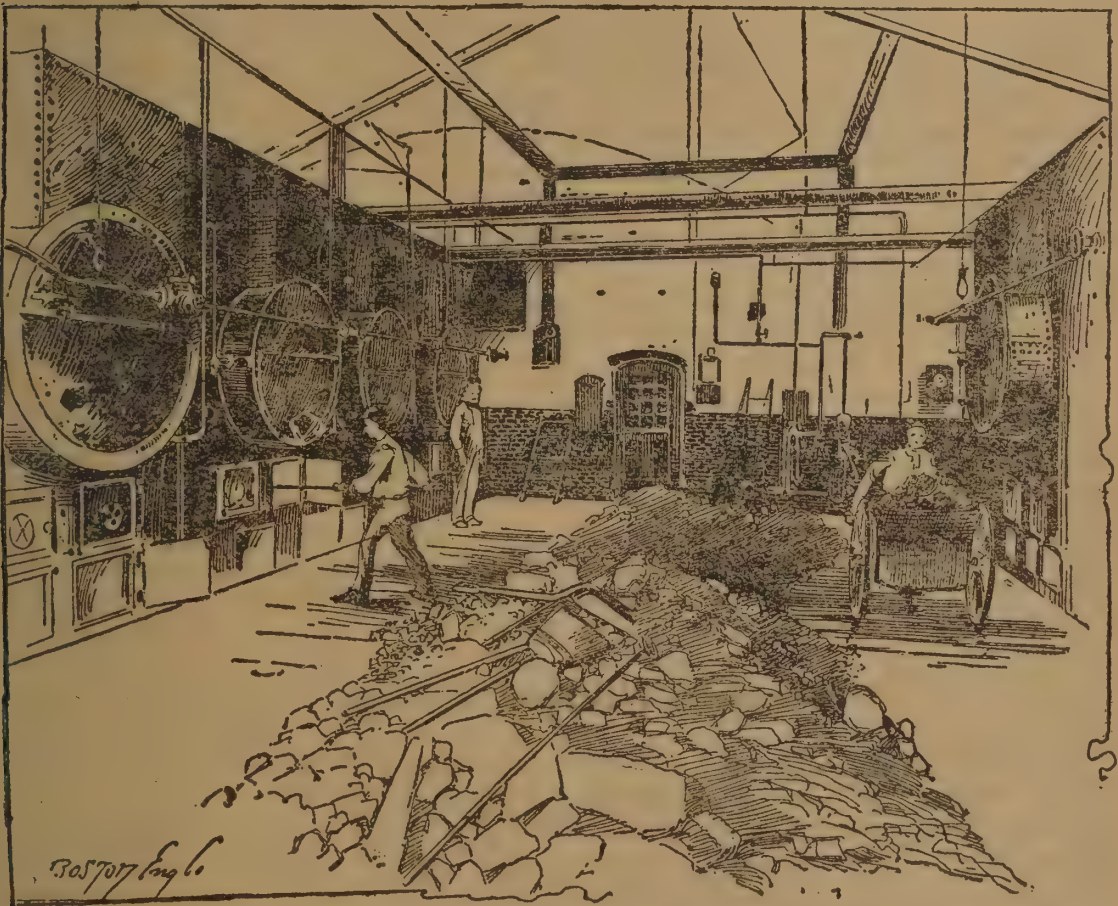
ST. JOHNLAND, L. I., Nov. 22, 1889.

I take great pleasure in stating my experience with Bradley's Fertilizers. The Complete Manure was used on an old pasture lot at the rate of about 600 pounds per acre. The corn was planted about June 1st, and from the very beginning was the finest piece of corn in the neighborhood. By actual measurement some of the stalks were over fifteen feet high, and it was all very tall and well eared. It was said by many old farmers who saw it that it was the finest piece of corn that they had ever seen.

G. S. GASSNER.

fail to give satisfactory results in the field. Crude fertilizing materials for plants may be likened to raw food for man.

As chemistry fails to distinguish the sources from which the plant-food elements of fertilizers are derived, and as their agricultural value depends very largely upon the forms in which these plant-food elements exist, the farmer must rely upon the reputation and integrity of the manufacturer or dealer for the purity of the manufactured fertilizer or the raw materials which he purchases. Some materials



PART OF THE BOILER ROOM.

which, by analysis, show large percentages of plant-food elements are worthless as real fertilizing agencies and are therefore adulterants if used for fertilizers. Such adulteration is impossible in goods made by such a house as the Bradley Fertilizer Company. With their high reputation they cannot afford to sell anything but goods of standard quality and purity, for it would be business suicide to put upon the market fertilizers so prepared as not to give satisfactory results in the field. A mixture of ground leather and other cheap materials may show just as good an analysis as standard goods and therefore be

DAVENPORT, DELAWARE CO., N. Y., Oct. 31, 1889.

Have used your fertilizers, and find them superior to all others. Shall use your goods, and shall not use any others.

JOHN MULKINS.

"One hundred per cent profit on the investment."

VIRGIL, N. Y., Nov. 10.

I have used your fertilizer on my soil, which is a sandy loam, for eight years, using from one to four tons each year, and in no instance have I realized less than 100 per cent profit on the investment, and usually much more. Use from 100 to 200 pounds per acre for corn, dropped in the hill before planting; for oats and buckwheat drilled in with the same.

E. D. BRANCH.

Eight years' experience.

MIDDLEFIELD CENTRE, N. Y., Nov. 14.

I have had eight years' experience with Bradley's Phosphate, having used it upon all crops grown upon my farm and garden, and have never used it upon a crop without receiving large returns from it. By leaving rows without Phosphate, I find my crop is increased from one-half to three-fourths where the Phosphate is used. This year, my potatoes where the Phosphate was used were all of good size and nearly free from rot, and a good crop; on the same piece, without Bradley's Phosphate, the potatoes were small and badly rotted. I have tried many other brands of fertilizers by the side of yours, and cannot find any that commence with Bradley's.

L. D. VAN PATTEN.

IRELAND MILLS, CHENANGO COUNTY, N. Y., JAN. 30, 1889.

I have used your fertilizers for seven years, and have found them the best of any that I ever used. I have used your goods by the side of another well-known brand sold in this section, with results 50 per cent in favor of your goods. I have used 150 pounds to the acre on potatoes, and get 250 bushels of potatoes per acre on poor land.

CHAS. D. WILBUR.

Bradley's Phosphate Gives Thirty Per Cent More Grass.

SILVER SPRINGS, N. Y., Nov. 22.

I have used your Superphosphate for the past five years, and have tried it by the side of two other makers' best brands of fertilizers. I could show any person a great difference in the seeding of grass at any time for three years after the fertilizers were sown,—your Phosphate giving me at least 30 per cent more grass any year for the three years after the goods were sown. I consider your Phosphate the best fertilizer that I have ever used, and the only one that I shall invest my money in in the future.

M. V. BUSH.

"The effects of your Phosphate are lasting."

BANGOR, N. Y., Dec. 7.

I have used your Phosphate on corn and potatoes, and where I used the Phosphate I got just double the number of bushels that I did where it was not used. Have also used it on grain on land without any other manure, and could see a marked difference in favor of the Phosphate. After taking off crops of corn and potatoes, I sowed wheat and seeded down. The next year I could see a marked difference in the hay, from the effects of the Phosphate used on corn and potatoes the year before. This showed me very plainly that the effects of your Phosphate are lasting.

H. B. RIDER.

given just as high a valuation by state chemists who have no means of getting at the real agricultural value, but the plant quickly finds out the difference and the crop will show it in a most marked way. Farmers cannot afford to run the risk of buying inferior fertilizers, and it is because thousands of them have such complete confidence in the intrinsic value of Bradley's Phosphate, as demonstrated by long successful experience in the field, that they use it in preference to any other fertilizer that may be sold even at a less price. The constant aim of this company has been to produce fertilizers that will produce the best results in the field rather than in the laboratory.

MORE ABOUT FERTILIZER-MAKING.

[From the N. E. Homestead.]

THE reader who has followed thus far will see that the dissolving of the bone phosphate with acid is but a small (although a most important) part of the work of making a complete fertilizer. Soluble phosphate of lime is indeed the most important of all the ingredients of a fertilizer, and it is the basis in the manufacture of all goods of the highest quality. The fertilizer known as "Bradley's Phosphate" is decidedly something more than bone phosphate simply treated with oil of vitriol. It contains in addition to a large percentage of available phosphoric acid both potash and nitrogen and is therefore a complete fertilizer. The potash is supplied in the form of high-grade muriate or sulphate of potash, which is added at the proper time to the other materials at the mills, so as to be thoroughly ground and evenly incorporated with the whole. The nitrogen is added in various forms, many of which are carefully treated and specially prepared before entering into the finished product. The ammoniates and potash being incorporated with the fertilizer to raise it to the desired standard, the mixture is then run through the finishing mills and screens and comes out in the form in which it is bagged and barreled and sent to market—a fine dry article of the very best quality.

Special attention is given by this company to supplying all the constituents of plant food in the forms and proportions which science and long practical experience have demonstrated to be best for nourishing the crops throughout the entire season. The majority of farmers have little knowledge of the appetite which plants have for certain forms of plant food, or of their special requirements at different stages of their development. The Bradleys own several thousand

Superior to all other kinds.

NEW LISBON, N. Y., Oct. 16, 1889.

I have used your fertilizers on corn, wheat, oats, and potatoes, and will say that they have proved far superior to all other kinds. In the future I shall use no other.

DELOSS POTTER.

STOCKHOLM, N. Y., Jan. 15.

This is to certify that I have used the Bradley Fertilizer Co.'s goods for six years in connection with other brands, and have found Bradley's equal if not superior to any other, and consider it a profitable investment for any farmer. I shall continue to use Bradley's Fertilizers.

H. H. DELANO.

"Far superior to any other."

AMES, N. Y., Nov. 14.

I have used your fertilizers on corn, potatoes, and hops, and general crops, in competition with other brands, and I feel free to say they are far superior to any other I have tried. Many testimonials on fertilizers are merely opinions and not facts, but to all farmers in want of an honest fertilizer I should especially recommend Bradley's.

JOHN WHITE.

Great advantage in using Bradley's Fertilizers on Corn.

SOUTH ARGYLE, N. Y., Nov. 19.

I have used your fertilizers for the last seven or eight years with good success. I have never used it but once on rye, the field being too steep to top-dress with manure. I think I got a better catch in seeding with timothy and clover than I would have had without it. My land that I use it on is what we call loam land with some small stones, not a gravelly soil, but upland. This season, on corn, I used about 200 pounds to the acre. I planted my corn pretty early, and put the fertilizer in the hill, and all over my fields I drew and spread what manure I made through the winter, of course it was not rotted, and the consequence was the fertilizer started the corn, and in June I had the rankest and largest corn within a circuit of twenty miles. I saw a number of people pass from a distance, and they said they saw no corn on their travels like mine. There is one thing I have found in my experience, by using your fertilizer on corn, you can hoe it a week or ten days sooner than you could without it. It starts it from the "*word go*." And another thing: you can cut it up just so much earlier. I had mine cut up mostly this season, before any frost came. I did not have an ear of soft corn, and a great many farmers who did not use the fertilizer did not have a *sound* ear at all. Such has been my experience.

JOHN H. FERGUSON.

Wheat, Corn, and Oats.

VERONA, N. Y., Nov. 17.

As regards your fertilizers, I have used them more or less for a number of years, mostly on a clay loam. I have used them mostly in the drill, and found them uniformly a good article, running freely in the drill without clogging. I have generally used about 200 pounds per acre on oats, 200 to 400 pounds per acre on wheat, and 200 pounds in the hill with corn. I have never made any experiments of note as to increased yield with or without fertilizers, but when the season was favorable, I have been well satisfied it has paid me to use your fertilizers.

C. H. WARREN.

acres of land on which their fertilizers are used in carefully conducted experiments on different crops and soils.

This is indeed one of the secrets of the success of this old and reliable concern. Its business has been established and maintained because the fertilizers it made were not only of a high class at the start, but there has also been a never-failing and earnest purpose to improve the quality and condition of the fertilizers manufactured. Many of the raw materials are prepared under the direction of their own chemists and only those of standard quality are accepted for use in the various brands made by the company. It is here that the chemists play an important part as well as in the work of analyzing the mixed fertilizers, as above explained.

THE IMPORTANCE OF FERTILIZERS.

THE Bradley Fertilizer Company, while giving to the other elements of plant food their proper place and value in a fertilizer, have always insisted upon the first importance of phosphoric acid and have always given it the chief place in the composition of their fertilizers. The uniformly successful results which have followed the application of their products, and their superiority in the field, shows how well the teachings of true scientific principles have been carried out. The careful preparation of the raw materials which furnish the nitrogen and potash, and the mixing of all these materials with each other, necessitate special and expensive machinery. Much time and money have been spent, and many costly investigations have been made by this company in bringing the manufacture of superphosphates to its present state of perfection, and any complete discussion of the subject would require volumes. It is hoped, however, that the reader will get a very good general idea of the magnitude of this industry and of its importance to all mankind.

BONE.

EVERY farmer knows the fertilizing value of fine ground bone for some purposes. He knows that the finer it is the greater its agricultural value and the more readily it becomes available for plants. He also knows the necessity of an absolutely pure article. He will find it among the products of this factory in its best state. Indeed, Bradley's fine ground bone has received a valuation of \$41.37 per ton from the Connecticut experimental station. — From *N. E. Homestead*, March 30, 1889.

Directions for Using Bradley's Fertilizers.

As Bradley's Fertilizers are high-grade chemical fertilizers, they should be evenly distributed, and, where used in the hill or drill, should not come into direct contact with the seed, but should be well mixed with the soil before dropping the seed.

Where drills are used, they can be drilled in with the seed. Where used broadcast, they should be evenly sown and harrowed in with the seed. When properly applied, their use will ensure a quick start, rapid growth, and large yields of improved quality.

In the following directions for use we recommend the more usual amounts for each crop, though many of the best farmers tell us that they get the largest returns from the money invested where they use the fertilizers in much larger quantities. Where no barn-yard manure is used, many apply 1000 to 1500 pounds to the acre, part broadcast and part in the hill or drill.

Potatoes. Nearly every farmer now uses Phosphate on this crop, even if he has barn-yard manure in abundance. If used in connection with manure, apply **250** to **350** pounds per acre in the hill or drill, thoroughly mixed with the soil. This will pay a large profit in the increased yield, and the potatoes will be much smoother, of *better quality*, and much less liable to rot than where barn-yard manure alone is used. Large crops of potatoes of the best quality can be grown on Bradley's Fertilizers alone. When used without barn-yard manure, apply **400** to **600** pounds to the acre. Market-gardeners and many large farmers use from **800** to **1500** pounds of Fertilizer to the acre on this crop, using **300** to **400** pounds in the hill or drill, and the balance broadcast, harrowed in. They claim that they get the greatest profit from the investment when used in these quantities.

Corn. Use **250** to **350** pounds per acre in the hill or drill at the time of planting, well mixed with the soil. If used without barn-yard manure, on poor land, apply **600** to **800** pounds per acre, two-thirds sown broadcast and harrowed in, and one-third scattered in the hill or drill. As the corn crop is so liable to be injured by early frosts, in our short seasons, it is very necessary to use the Fertilizers, as a small amount used in the hill or drill, at the time of planting, will ripen the crop about two weeks earlier, and, at the same time, make a much heavier crop of better corn.

Top-dressing Grass-land and Re-seeding.

All mowing or pasture lands are greatly benefited by an application of **200**

TWENTY QUESTIONS ABOUT ELECTRICITY.

These questions originated with *Scribner's Magazine*, and are issued in connection with Messrs. Charles Scribner's Sons' electric series:

How strong a current is used to send a message over an Atlantic cable?

Thirty cells of battery only. Equal to thirty volts.

What is the longest distance over which conversation by telephone is daily maintained?

About 750 miles; from Portland, Me., to Buffalo, N. Y.

What is the fastest time made by an electric railway?

A mile a minute by a small experimental car. Twenty miles an hour on street railway system.

How many miles of submarine cable are there in operation?

Over 100,000 miles, or enough to girdle the earth four times.

What is the maximum power generated by an electric motor?

Seventy-five horse power. Experiments indicate that one-hundred horse power will soon be reached.

How is a break in submarine cable located?

By measuring the electricity needed to charge the remaining unbroken part.

How many miles of telegraph wire in operation in the U. S.?

Over a million, or enough to encircle the globe forty times.

How many messages can be transmitted over a wire at one time?

Four, by the quadruplex system in daily use.

How is telegraphing from a moving train accomplished?

Through a circuit from the car roof inducing a current in the wire on poles along the-track.

What are the most widely separated points between which it is possible to send a telegram?

British Columbia and New Zealand, via America and Europe.

How many miles of telephone wire in operation in the U. S.?

More than 170,000, over which 1,055,000 messages are sent daily.

What is the greatest candle power of arc light used in a lighthouse?

Two million, in lighthouse at Houstholm, Denmark.

How many persons in the U. S. are engaged in business depending solely on electricity?

Estimated 250,000.

to **300** pounds of Bradley's Fertilizers per acre, sown broadcast early in the spring, as soon as the snow is off the ground, and just before a rain. Both the yield and quality of the grass are much improved. When mowing lands get so run out, or, as some term it, "bound-out," as to render them unprofitable, it is quite expensive, in many cases, to break them up, manure, and re-seed them, and fit them for mowing lands again; especially when circumstances make it inconvenient to cultivate such lands in hoed crops. Such lands may be usually restored without re-seeding, by supplying **300** to **500** pounds of Bradley's Fertilizers per acre, early in the spring, just before a rain, or upon a light fall of snow; it can also be applied to advantage immediately after mowing.

Where circumstances are favorable, however, the restoring of old meadows, and even pasture-lands, can be better accomplished by breaking up, turning the sod as evenly as possible, say in August or September, then rolling and harrowing thoroughly and seeding down, using from **400** to **500** pounds of Bradley's Fertilizers to the acre. We have ample proof that this is a good way to restore old and worn-out mowing lands,

Oats. Apply **200** to **400** pounds per acre, sown broadcast and harrowed or drilled in with the seed. This will increase the crop largely and often prevent blight or rust, as well as ripen the oats much more evenly. If grass-seed is sown with the oats, the Fertilizers will insure a good catch of the seed, and their effects will be plainly seen for several years. The use of Bradley's Fertilizers upon oats will prove as profitable to the farmer as upon any crop which he can grow.

Wheat. Apply **200** pounds per acre, drilled in with the seed. If sown broadcast, **300** to **400** pounds per acre. Farmers who drill in their fertilizers will prefer Bradley's Fertilizers, because they are uniformly fine and dry, and drill readily and easily.

Rye. Apply **200** pounds per acre, drilled in with the seed. If sown broadcast, **300** to **400** pounds per acre. The increase in the straw will more than repay the cost of the Fertilizers, and the grain will be increased in proportion.

Barley and Buckwheat. Apply **200** to **400** pounds per acre, according to condition of land, in the same manner as for wheat and rye.

Beets, Carrots, and Onions. Apply **400** to **500** pounds per acre. If used without manure, apply double the amount of Fertilizer, using half broadcast and half in the drill, well mixed with the soil. After thinning the crop it is well to apply a small amount of Fertilizer as a top-dressing, cultivating thoroughly. Remember that the

How long does it take to transmit a message from San Francisco to Hong Kong?

About fifteen minutes, via New York, Canso, Penzance, Aden, Bombay, Madras, Penang, and Singapore.

What is the fastest time made by an operator sending messages by the Morse system?

About forty-two words per minute.

What war vessel has the most complete electrical plant?

United States man-of-war Chicago.

What is the average cost, per mile, of a transatlantic submarine cable?

About \$1,000.

How many miles of electric railway are there in operation in the U. S.?

About 400 miles and much more under construction.

What strength of current is dangerous to human life?

Five hundred volts, but depending largely on physical conditions.

WE'RE WORTH \$61,459,000,000.

THE WEALTH OF THE COUNTRY TO-DAY AND IN PAST DECADES.

From reports obtained from the State treasurers throughout the country, the "New York World" figures out an increase in this country's taxable property since 1880 of \$6,963,000,000, and in its actual wealth of \$18,162,000,000. The total wealth is \$61,459,000,000, exclusive of public property, and \$3,009,000,000 of property invested and owned abroad. The assessed value of taxed property and our actual wealth at different decades have been: Assessed value, 1850, \$5,287,631,140; 1860, \$12,084,500,005; 1870, \$11,342,789,366; 1880, \$16,902,993,543; 1889, \$23,719,000,000. Actual wealth, 1850, \$13,652,499,739; 1860, \$31,201,310,676; 1870, \$30,068,518,507; 1880, \$43,642,000,000; 1889, \$61,459,000,000.

The wealth of the United States now exceeds the total wealth of the whole world at any time previous to the middle of the eighteenth century, and the amount invested abroad is alone equal to the national wealth of Portugal and Denmark. The total wealth of only five nations is equal to the mere increase of the United States in the past nine years.

use of Fertilizer on these crops makes a large saving in labor, as it contains no weed seeds, and gives the plants a vigorous start, enabling them to get out of the way of weeds natural to the soil.

Hungarian Grass and Millet. We especially recommend the farmer who finds himself likely to have a short hay crop to take a few acres of his most unproductive mowing lands, turn them over, and apply a dressing of Bradley's Fertilizers, and put in one of these crops. With **300 to 400** pounds per acre, you can raise from two to four tons of hay, which, when well cured, will be nearly as valuable for horses and milch cows as the best timothy hay. You also have the additional satisfaction of knowing that your land is being improved at the same time.

Fodder Corn. Some farmers prefer this crop to Hungarian or millet, and others grow it to feed in the time when their pastures are short. **400 to 500** pounds of Bradley's Fertilizers, sown in drills and worked into the earth before planting the corn, using about one and one-half bushels of seed to the acre, will grow a large amount of excellent fodder, even upon light land or that in poor condition. If it is not needed to be fed green, it may be cured for winter use.

Many farmers have built silos and now cure their corn and other green crops by the new system of Ensilage. This process is becoming an important addition to the resources of the farm. Large crops of corn for Ensilage can be raised by using Bradley's Fertilizers alone.

Turnips. Apply **300 to 400** pounds per acre, harrowed in with the seed; this quantity will give an excellent crop. This application at the time of sowing will produce the clearest and sweetest turnips. The sowing should be done just before a rain, if possible.

"The same kind of turnips grown on the same fields, one with phosphate and the other with barn-yard manure, presents this striking difference in the proportion of phosphate contained in the ash of the plant. The one grown on phosphate yielded thirty per cent. of phosphate, while the manure turnip contained only eleven per cent. of phosphate. This could not fail to make an important difference in their relative value for the feeding of stock whose bones are growing, and which require a large amount of phosphate in their food."

DR. JAS. F. W. JOHNSON, F. R. S. S., L. & E.

Tobacco. When the Fertilizer is used without other manure, apply from **800 to 1600** pounds per acre (amount depending upon the richness of the soil); when used in connection with barn-yard manure, use from **500 to 600** pounds per acre.

Beans and Peas. Apply one tablespoonful to a hill. If sown in rows, use at the rate of **400 to 500** pounds per acre.

SAVINGS THE FOUNDATION OF WEALTH.

THE man who saves something every year is on the road to prosperity. It may not be possible to save much. If not, save a little. Do not think that a dollar or a dime is too small a sum to lay by. Everybody knows how little expenditures get away with large sums. But few seem to know that the rule is one that works both ways. If a dime spent here and a dollar there soon makes a large hole in a man's income, so do dimes and dollars laid away soon become a visible and respectable accumulation. In this country any man can make himself independent or keep himself under the harrow for life, according as he saves or spends his small change.

Most of our millionnaires laid the foundation of their fortunes by *saving*. It is said that Senator Farwell commenced life as a surveyor.

Cornelius Vanderbilt began life as a farmer.

Postmaster General Wanamaker's first salary was \$1.25 a week.

A. T. Stewart made his first start as a school teacher.

Cyrus Field began life as a clerk in a New England store.

Andrew Carnegie did his first work in a telegraph office at \$3 a week.

Whitelaw Reid, our minister to France, did work as correspondent of a Cincinnati newspaper for \$5 a week.

Moses Taylor clerked in Water street, New York, at \$2 a week.

George W. Childs was an errand boy for a bookseller at \$4 a month.

Jay Gould canvassed Delaware county, N. Y., selling maps at \$1.50 apiece.

And to the above names, which are familiar to most persons, might be added hundreds of others whose fortune and fame had the same small beginning.

The same or better opportunities exist to-day for bright, energetic young men to succeed that existed when the above millionnaires began their business life, but to accomplish it, the same perseverance and economy which characterized their early career must be observed.

Squashes, Melons, and Cucumbers. Apply one tablespoonful to the hill, thoroughly mixing with the soil before dropping the seed. If no barn-yard manure is used, dig in as much more once or twice during the season around the growing vines.

Cabbages and Tomatoes. Apply a handful to a plant at the time of transplanting; cultivate thoroughly, and apply the same quantity around the plant at first hoeing. Treated in this manner, cabbages have been obtained four times larger than those without the Fertilizer.

Asparagus. Apply eight quarts to the square rod, with about eight quarts of salt, at the time of digging over the beds in the spring; to be well raked in. In about ten days after, apply eight quarts more of salt as a top-dressing.

Strawberries. Apply four quarts to a square rod, broadcast, early in the spring, with a good dressing of leaf-mould or well-rotted manure, which will keep the ground cool and moist, and insure a good crop.

Raspberries, Blackberries, and Currants. A liberal dressing of Fertilizer, applied early in the spring, and well forked in about the roots, will be of great advantage to these plants.

Fruit-Trees and Grape-Vines are greatly benefited by a liberal application of Fertilizer and ground bone, mixed half and half, and forked in around the roots. This will insure a vigorous growth of wood, and the fruit will be much increased in quantity and of superior quality.

Hops. Hop growers use Bradley's Fertilizers with very satisfactory results. These Fertilizers seem just adapted for that crop, as they not only greatly increase the yield of hops, but produce healthier vines, free from lice and other insects, and less liable to mould. They should be applied in the fall, then a larger quantity should be used in the spring. Scatter around the vine very early, about 200 pounds per acre, so that the spring rains will dissolve it through the soil. Then use about the same amount per acre at the time of hilling the plants. This last application will show its effects in the large yield and fine quality of the hops.

Bradley's Fertilizers do not deteriorate by keeping any length of time. The plant-food constituents of these fertilizers are so locked up in chemical combination that no loss of strength occurs if they are properly sheltered in a dry place.

BRADLEY'S SUPERPHOSPHATE

**A
COMPLETE
MANURE**

FOR ALL

CROPS!

RICH IN
**PHOSPHORIC
ACID**

AMMONIA
AND

POTASH.



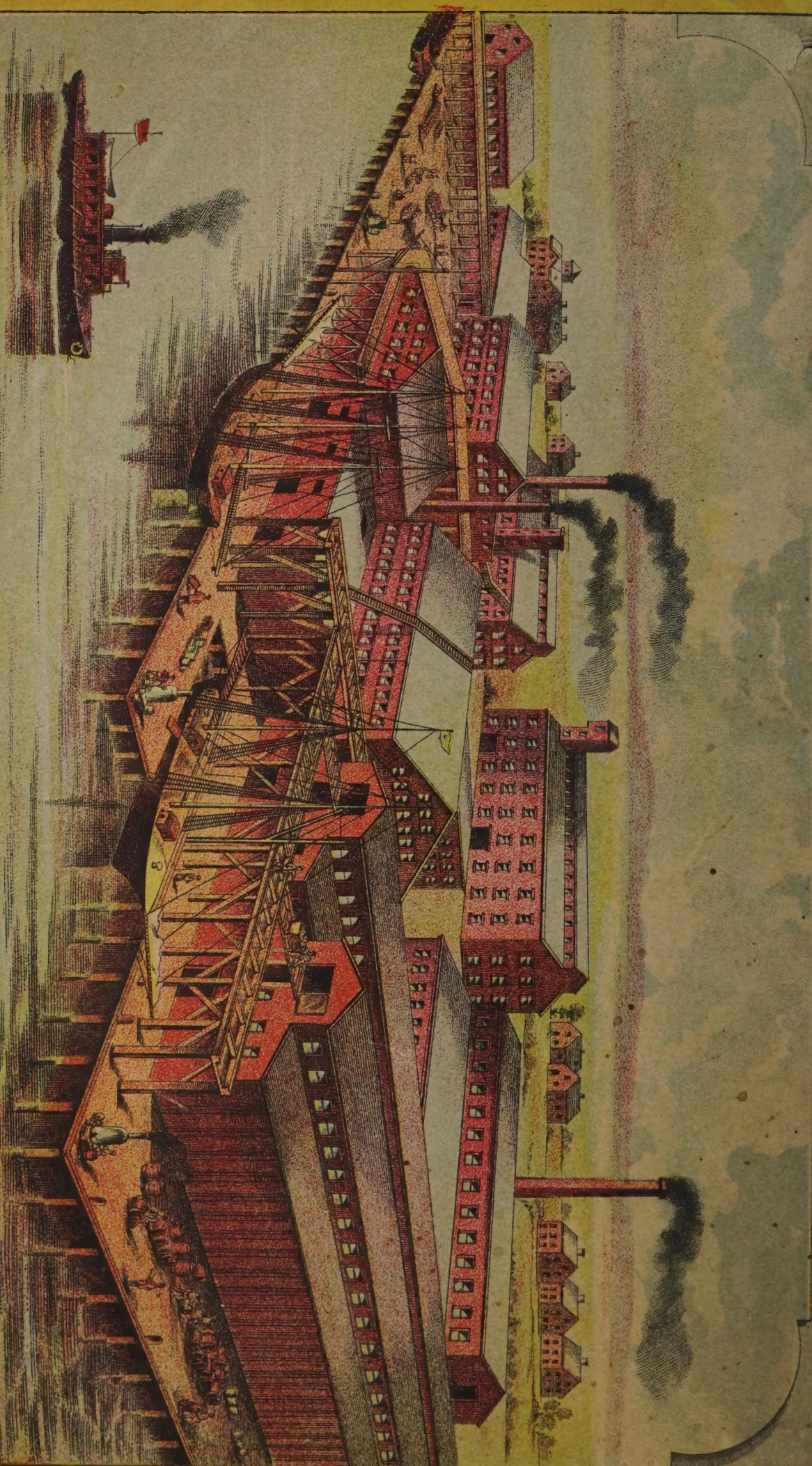
Highest Cash Price Paid for
BONES
BY THE
Bradley Fertilizer Company,
27 KILBY STREET, . . . BOSTON

MASTODON GIGANTEUS

THE MOST PERFECT, AND AT THE SAME TIME THE MOST WONDERFUL OF THE LAND ANIMALS, IS THE MASTODON. ITS DIMENSIONS WERE TRULY GIGANTIC, SOMETIMES MEASURING TWELVE FEET IN HEIGHT BY TWENTY-FIVE IN LENGTH. ITS WEIGHT COULD SCARCELY HAVE FALLEN BELOW 20 TONS.

**FOR
29
YEARS
IT HAS
MAINTAINED
ITS
REPUTATION
AS THE
BEST
IN THE
MARKET.**

(Fac-simile of Bradley Fertilizer Company's Standard Poster.)



BRADLEY FERTILIZER COMPANY'S WORKS NORTH WEYMOUTH, MASS.